

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

**DONNA CURLING, ET AL.,
Plaintiffs,**

v.

**BRAD RAFFENSPERGER, ET AL.,
Defendants.**

Civil Action No. 1:17-CV-2989-AT

**CURLING AND COALITION PLAINTIFFS'
PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW**

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Pursuant to this Court’s directive, Curling and Coalition Plaintiffs¹ respectfully submit the following proposed findings of fact and conclusions of law. Plaintiffs begin with an articulation of the relevant legal standards applicable to the issues in this case.

I. APPLICABLE LEGAL STANDARDS

A. Elements Required to Prove Standing

1. A plaintiff must establish three elements to have Article III standing. First, “the plaintiff must have suffered an ‘injury in fact.’” *United States v. Hays*, 515 U.S. 737, 743 (1995) (quoting *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 560 (1992)). To satisfy this requirement, a plaintiff must show “an invasion of a legally protected interest that is concrete and particularized, and actual or imminent, not conjectural or hypothetical.” *Spokeo, Inc. v. Robins*, 578 U.S. 330, 338 (2016); *see also Fla. State Conf. of NAACP v. Browning*, 522 F.3d 1153, 1159 (11th Cir. 2008) (same). Second, the injury must be fairly traceable to the defendant’s challenged actions rather than to “the independent action of some third party not before the court.” *Lujan*, 504 U.S. at 560 (quoting *Simon v. E. Ky. Welfare Rights Org.*, 426 U.S. 26, 41–42 (1976)); *see also Browning*, 522 F.3d at 1159. Third, the plaintiff’s injury, or threat of injury, must be “likely . . . redressed

¹ The Curling Plaintiffs are Jeffrey Schoenberg, Donna Curling, and Donna Price. The Coalition Plaintiffs include the Coalition for Good Governance (“CGG”), Laura Digges, William Digges, and Megan Missett.

by a favorable decision.” *Lujan*, 504 U.S. at 561 (citing *Simon*, 426 U.S. at 38); *see also Browning*, 522 F.3d at 1159.

2. “An organization can establish standing in two ways: (1) through its members (i.e., associational standing) and (2) through its own injury in fact that satisfies the traceability and redressability elements.” *Ga. Ass’n of Latino Elected Officials, Inc. (“GALEO”) v. Gwinnett Cnty. Bd. of Registration & Elections*, 36 F.4th 1100, 1114 (11th Cir. 2022).

3. “An association has standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization’s purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit.” *Nat’l All. for the Mentally Ill v. Bd. of Cnty. Comm’rs*, 376 F.3d 1292, 1296 (11th Cir. 2004) (quoting *Friends of the Earth, Inc. v. Laidlaw Env’t Servs. (TOC), Inc.*, 528 U.S. 167 (2000)); *see also Hunt v. Wash. State Apple Advert. Comm’n*, 432 U.S. 333, 343 (1977).

1. Establishing Individual Standing

a) Injury in Fact

4. A legally protected interest is one that “is protected by statute or otherwise.” *Bochese v. Town of Ponce Inlet*, 405 F.3d 964, 980 (11th Cir. 2005). To be protected, an interest “must consist of obtaining compensation for, or

preventing, the violation of a legally protected right.” *Id.* at 980. An invasion exists if “the plaintiffs have a legal right to do what is allegedly being impeded.” *Citizen Ctr. v. Gessler*, 770 F.3d 900, 910 (10th Cir. 2014).

5. “An injury is concrete if it actually exists—that is, if it is ‘real, and not abstract.’” *Hunstein v. Preferred Collection & Mgmt. Servs.*, 48 F.4th 1236, 1242 (11th Cir. 2022) (citation omitted). “[I]ntangible injuries can nevertheless be concrete.” *Spokeo*, 578 U.S. at 340.

6. A “particularized” injury is one that affects the plaintiff “in a personal and individual way.” *Spokeo*, 578 U.S. at 339. “The fact that an injury may be suffered by a large number of people does not of itself make that injury a nonjusticiable generalized grievance,” *id.* at 339 n.7 (giving example of widely shared injuries from a mass tort).

7. “An imminent injury is one that is ‘likely to occur immediately.’” *Browning*, 522 F.3d at 1161 (citation omitted). “To be likely enough, the threatened future injury must pose a ‘realistic danger’ and cannot be merely hypothetical or conjectural. How likely is enough is necessarily a qualitative judgment” *Browning*, 522 F.3d at 1161 (citation omitted). Immediacy “requires only that the anticipated injury occur with[in] some fixed period of time in the future, not that it happen in the colloquial sense of soon or precisely within a certain number of days, weeks, or months.” *Id.*

8. “A plaintiff seeking prospective relief to prevent future injuries must prove that their threatened injuries are ‘certainly impending.’” *GALEO*, 36 F.4th at 1114 (quoting *Clapper v. Amnesty Int’l USA*, 568 U.S. 398, 401 (2013)).

9. “There is no minimum quantitative limit required to show injury; rather, the focus is on the qualitative nature of the injury, regardless of how small the injury may be.” *Salcedo v. Hanna*, 936 F.3d 1162, 1172 (11th Cir. 2019). Injury-in-fact “serves to distinguish a person with a direct stake in the outcome of a litigation—even though small—from a person with a mere interest in the problem.” *Arcia v. Fla. Sec’y of State*, 772 F.3d 1335, 1340 (11th Cir. 2014). “The basic idea that comes out in numerous cases is that an identifiable trifle is enough for standing to fight out a question of principle” *United States v. Students Challenging Regul. Agency Procs. (SCRAP)*, 412 U.S. 669, 689 n.14 (1973).

10. Violations of Constitutional rights are *per se* “intangible harms that are also both direct and concrete.” *Muransky v. Godiva Chocolatier, Inc.*, 979 F.3d 917, 926 (11th Cir. 2020) (giving examples of free speech and free exercise).

11. “A citizen’s right to a vote free of arbitrary impairment by state action has been judicially recognized as a right secured by the Constitution” *Baker v. Carr*, 369 U.S. 186, 208 (1962).

12. “Voting is the beating heart of democracy. It is a ‘fundamental

political right, because it is preservative of all rights.” *Democratic Exec. Comm. of Fla. v. Lee*, 915 F.3d 1312, 1315 (11th Cir. 2019) (citation omitted).

13. “Confidence in the integrity of our electoral processes is essential to the functioning of our participatory democracy.” *Purcell v. Gonzalez*, 549 U.S. 1, 4 (2006).

14. “The right to vote is fundamental, forming the bedrock of our democracy.” *Wexler v. Anderson*, 452 F.3d 1226, 1232 (11th Cir. 2006). “Other rights, even the most basic, are illusory if the right to vote is undermined.” *Id.* at 1232 (quoting *Wesberry v. Sanders*, 376 U.S. 1, 17 (1964)).

15. “It is beyond cavil that ‘voting is of the most fundamental significance under our constitutional structure.’” *Burdick v. Takushi*, 504 U.S. 428, 433 (1992) (quoting *Ill. Bd. of Elections v. Socialist Workers Party*, 440 U.S. 173, 184 (1979)).

16. “The right to vote freely for the candidate of one’s choice is of the essence of a democratic society, and any restrictions on that right strike at the heart of representative government.” *Reynolds v. Sims*, 377 U.S. 533, 555 (1964).

17. “The Supreme Court has ‘long recognized that a person’s right to vote is ‘individual and personal in nature’” and ‘voters who allege facts showing disadvantage to themselves as individuals have standing to sue’ as they have alleged a concrete and particularized injury.” *GALEO*, 36 F.4th at 1114 (quoting *Gill v. Whitford*, 585 U.S. 48, 49 (2018)).

18. “It has been repeatedly recognized that all qualified voters have a constitutionally protected right to vote,” and that right necessarily encompasses “the right of qualified voters within a state to cast their ballots and have them counted.” *Reynolds*, 377 U.S. at 554 (internal citations omitted).²

b) Traceability

19. To meet the standing traceability requirement, a plaintiff’s claimed injuries “must be ‘fairly traceable to the challenged action of the defendant, and not the result of the independent action of some third party not before the court.’” *GALEO*, 36 F.4th at 1115 (citation omitted).

20. “[T]he presence of multiple actors in a chain of events that lead to the plaintiff’s injury does not mean that traceability is lacking with respect to the conduct of a particular defendant.” *Garcia-Bengochea v. Carnival Corp.*, 57 F.4th 916, 927 (11th Cir. 2023). “Even a showing that a plaintiff’s injury is indirectly caused by a defendant’s actions satisfies the fairly traceable requirement.” *Resnick v. AvMed, Inc.*, 693 F.3d 1317, 1324 (11th Cir. 2012).

c) Redressability

21. The last requirement that Plaintiffs must satisfy to establish Article III

² In light of this authority, the Court previously held that “an injury to CGG members’ right to have their votes counted as cast is a concrete, legally cognizable Article III injury.” Dkt. 1705 at 86 (citing *City of S. Miami v. Governor*, 65 F.4th 631, 639-40 (11th Cir. 2023)).

standing is to show that their claimed injuries in fact are “likely to be redressed by a favorable decision.” *Jacobson v. Fla. Sec’y of State*, 974 F.3d 1236, 1245 (11th Cir. 2020); *see also Curling v. Raffensperger*, 397 F. Supp. 3d 1334, 1412 (N.D. Ga. 2019) (this Court enjoining Defendants from using the GEMS/DRE system after 2019).

22. “Federal courts possess broad discretion to fashion an equitable remedy.” *Black Warrior Riverkeeper, Inc. v. U.S. Army Corps of Eng’rs*, 781 F.3d 1271, 1290 (11th Cir. 2015).

23. “Significantly, for standing purposes the relief sought need not be complete.” *Garcia-Bengochea*, 57 F.4th at 927; *see also Made in the USA Found. v. United States*, 242 F.3d 1300, 1310 (11th Cir. 2001) (agreeing with authority holding that the availability of a “partial remedy would be sufficient for redressability” and that “partial relief is sufficient for standing purposes when determining whether we can order more complete relief would require us to delve into complicated and exceptionally difficult questions regarding the constitutional relationship between the judiciary and the executive branch”).

2. Establishing Organizational Standing Under a Diversion of Resources Theory

a) Injury in Fact

24. One “distinct form” of standing is organizational standing. *Nat’l All. for the Mentally Ill*, 376 F.3d at 1295. “[A]n organization can establish its own

injury in fact under a diversion of resources theory.” *GALEO*, 36 F.4th at 1114 (citing *Jacobson*, 974 F.3d at 1249-50); *see also Fair Fight Action, Inc. v. Raffensperger*, 634 F. Supp. 3d 1128, 1177 (N.D. Ga. 2022).

25. An organization must identify what activities they are “divert[ing] resources away from in order to spend additional resources” combatting the practices at issue. *Jacobson*, 974 F.3d at 1250. Diverting resources from one activity aimed at achieving an organization’s mission to a different activity aimed at the same mission is sufficient. *See, e.g., GALEO*, 36 F.4th at 1114–15 (citing cases where allegations of diversion between organizational activities were sufficient for standing, namely *Browning*, 522 F.3d at 1165; *Common Cause/Ga. v. Billups*, 554 F.3d 1340, 1350 (11th Cir. 2009); *Ga. Latino All. for Hum. Rights v. Governor of Ga.*, 691 F.3d 1250, 1260 (11th Cir. 2012)).

26. “To prove injury in fact based on an organization’s diversion of resources to protect individuals from harm, the organizational plaintiff must prove *both* that it has diverted its resources *and* that the injury to the identifiable community that the organization seeks to protect is itself a legally cognizable Article III injury that is closely connected to the diversion.” *City of S. Miami*, 65 F.4th at 638-39. Such harm also must not be speculative; it “must be concrete and imminent.” *Id.* at 639; *see also Clapper*, 568 U.S. at 409.

27. “[T]o establish a resource-diversion injury, CGG [Coalition for Good

Governance] ‘must present ... concrete evidence to substantiate its fears,’ rather than ‘commit resources based on mere conjecture about possible governmental actions.’” Dkt. 1705 at 86 (quoting *City of S. Miami*, 65 F.4th at 639). “While this standard does not require a plaintiff to show that it is ‘literally certain that the harms they identify will come about,’ it, at the very least, requires a showing that there is a ‘substantial risk’ that the harm will occur.” *Tsao v. Captiva MVP Rest. Partners, LLC*, 986 F.3d 1332, 1338-39 (11th Cir. 2021).

b) Traceability

28. To establish causation for purposes of standing, an organization “need only allege a ‘drain on [the] organization’s resources’ that ‘arises from the organization’s need to counteract the defendants’ asserted illegal practices.’” *GALEO*, 36 F.4th at 1116.

c) Redressability

29. As is the case with an individual establishing their own standing, an organization seeking to establish standing under a diversion of resources theory must show that its own injury in fact “will be redressed by a favorable decision of the court.” *GALEO*, 36 F.4th at 1114.

B. Standing Under the One Plaintiff Rule

30. Under the One Plaintiff Rule, “the presence of one party with standing is sufficient to satisfy Article III’s case-or-controversy requirement,” and a court

does not need to determine whether other plaintiffs have standing before moving to the merits of the case. *Rumsfeld v. Forum for Acad. & Institutional Rts., Inc.*, 547 U.S. 47, 52 n.2 (2006).

31. For the One Plaintiff Rule to apply, the relief sought by the other plaintiffs must be the same as the relief sought by the plaintiff with standing. *Town of Chester, N.Y. v. Laroe Estates, Inc.*, 581 U.S. 433, 439-40 (2017) (“For all relief sought, there must be ***a litigant*** with standing, whether that litigant joins the lawsuit as a plaintiff, a coplaintiff, or an intervenor of right.” (emphasis added)).

32. The presence of multiple plaintiffs with different counsel, whether proceeding under different complaints (e.g., an intervenor) or entitled to separate attorney fees (e.g., a co-plaintiff), does not preclude a court’s application of the One Plaintiff Rule—as long as all such parties are seeking the same relief. *See Town of Chester*, 581 U.S. at 439 (“Thus, at the least, an intervenor of right must demonstrate Article III standing ***when it seeks additional relief beyond that which the plaintiff requests.***”) (emphasis added); *see also Shaw v. Hunt*, 154 F.3d 161, 166-67 (4th Cir. 1998).³

33. The One Plaintiff Rule can be applied at trial and doing so is

³ Referencing *Hunt*, the Court rejected Defendants’ invitation to decline to apply the One Plaintiff Rule even though Curling Plaintiffs and Coalition Plaintiffs were “represented by different attorneys who will be separately entitled to attorney fees if they prevail in the case.” Dkt. 1705 at 107.

appropriate. *See Fair Fight*, 634 F. Supp. 3d at 1178-1179 (at the trial stage, “if this Court finds that one Plaintiff has standing with respect to a challenged practice, there is standing sufficient for the Court to consider the challenge, regardless of whether any other Plaintiff has standing with respect to that challenged practice.”).

C. Plaintiffs’ Constitutional Claims

1. The *Anderson-Burdick* Test

34. Courts analyze First and Fourteenth Amendment claims that challenge election practices under the balancing test outlined by the Supreme Court in *Anderson v. Celebrezze*, 460 U.S. 780 (1983), and *Burdick v. Takushi*, 504 U.S. 428 (1992). *See Lee*, 915 F.3d at 1318.

35. Under the *Anderson-Burdick* framework, the Court “must first consider the character and magnitude of the asserted injury to the rights protected by the First and Fourteenth Amendments that the plaintiff seeks to vindicate.” *Anderson*, 460 U.S. at 789 (*Anderson-Burdick* step one). The Court then “must identify and evaluate ***the precise interests*** put forward by the State as justifications for the burden imposed by its rule.” *Id.* (emphasis added) (*Anderson-Burdick* step two). “In passing judgment, the Court must not only determine the ***legitimacy and strength*** of each of those interests, it also must consider the extent to which those interests make it ***necessary*** to burden the plaintiff’s rights.” *Id.* (emphasis added);

see also Timmons v. Twin Cities Area New Party, 520 U.S. 351, 358 (1997); *Cowen v. Ga. Sec’y of State*, 960 F.3d 1339, 1342 (11th Cir. 2020); *Lee*, 915 F.3d at 1322. In step two, the Court “must take into consideration not only the ‘legitimacy and strength’ of the state’s asserted interest, but also ‘the extent to which those interests make it *necessary* to burden’” plaintiffs’ voting rights. *Lee*, 915 F.3d at 1322 (original emphasis) (citing *Anderson*).

36. There is no “litmus test for measuring the severity of a burden that a state law imposes on a political party, an individual voter, or a discrete class of voters. However slight that burden may appear, as *Harper* demonstrates, it must be justified by relevant and legitimate state interests ‘sufficiently weighty to justify the limitation.’” *Crawford v. Marion Cnty. Election Bd.*, 553 U.S. 181, 191 (2008).

37. Laws that severely burden the right to vote “must be narrowly drawn to serve a compelling state interest.” *Lee*, 915 F.3d at 1318 (citing *Burdick*, 504 U.S. at 434). “And even when a law imposes only a slight burden on the right to vote, relevant and legitimate interests of sufficient weight still must justify that burden.” *Id.* at 1318-19 (citing *Common Cause/Ga.*, 554 F.3d at 1352). “Notably, ‘to establish an undue burden on the right to vote under the *Anderson-Burdick* test, Plaintiffs need not demonstrate discriminatory intent behind the’ challenged practice.” *Fair Fight*, 634 F. Supp. 3d at 1198 (quoting *Lee*, 915 F.3d at 1319).

38. “[B]urdens ‘are severe if they go beyond the merely inconvenient.’” *Fair Fight*, 634 F. Supp. 3d at 1198 (quoting *Crawford*, 553 U.S. at 205 (Scalia, J., concurring)). By contrast, “[o]rdinary and widespread burdens, such as those requiring nominal effort of everyone, are not severe.” *Fair Fight*, 634 F. Supp. 3d at 1198.

39. Neither the possibility of future increases in the financial cost of administering the election system nor considerations of administrative convenience can justify an infringement of fundamental rights. *See Tashjian v. Republican Party of Conn.*, 479 U.S. 208, 218 (1986).

2. Causation

40. Plaintiffs must also establish a causal connection between the burden and defendants’ actions. “A claim under Section 1983 ‘requires proof of an affirmative causal connection between the actions taken by a particular person under color of state law and constitutional deprivation.’” *Parsons v. Sheriff of Jefferson Cnty.*, 2023 WL 4635891, at *5 (11th Cir. Jul. 20, 2023) (quoting *LaMarca v. Turner*, 995 F.2d 1526, 1538 (11th Cir. 1993)).

D. Injunctive Relief Factors

41. “To obtain a permanent injunction, the moving party must show that: (1) it has suffered irreparable harm; (2) remedies at law will not provide adequate compensation for the injury; (3) on balance, an equitable remedy is warranted; and

(4) a permanent injunction will not disserve the public interest.” *West Virginia by and through Morrissey v. U.S. Dep’t of the Treasury*, 59 F.4th 1124, 1148 (11th Cir. 2023).

42. “The district court can exercise ‘a range of choice’ when deciding whether to grant a permanent injunction, so long as it does not misapply legal standards or rely on erroneous facts.” *Id.* (quoting *Broadcast Music, Inc. v. Evie’s Tavern Ellenton, Inc.*, 772 F.3d 1254, 1257 (11th Cir. 2014)).

1. Establishing Irreparable Harm and Inadequacy of Legal Remedies

43. “Courts consistently find infringements of voting rights to qualify as irreparable injury.” *Democratic Party of Ga., Inc. v. Crittenden*, 347 F. Supp. 3d 1324, 1346 (N.D. Ga. 2018). “[T]he disenfranchisement of the right to vote is an irreparable injury and one that cannot easily be redressed.” *Id.* at 1346; *see also Martin v. Kemp*, 341 F. Supp. 3d 1326, 1340 (N.D. Ga. 2018) (“[A] violation of the right to vote cannot be undone through monetary relief . . .”).

44. “In the context of elections, courts have held that ‘when constitutional rights are threatened or impaired, irreparable injury is presumed A restriction on the fundamental right to vote therefore constitutes irreparable injury.’”

Gwinnett Cnty. NAACP v. Gwinnett Cnty. Bd. of Registration & Elections, 446 F. Supp. 3d 1111, 1125 (N.D. Ga. 2020) (quoting *Obama for Am. v. Husted*, 697 F.3d 423, 436 (6th Cir. 2012)). “[S]everal of our sister circuits have similarly

concluded that missing the opportunity to vote in an election is an irreparable harm for the purposes of a preliminary injunction.” *Jones v. Governor of Fla.*, 950 F.3d 795, 828 (11th Cir. 2020). “Once the election occurs, there can be no do-over and no redress. The injury to these voters is real and completely irreparable if nothing is done to enjoin this law.” *League of Women Voters of N.C. v. North Carolina*, 769 F.3d 224, 247 (4th Cir. 2014).

2. Balancing the Harm to the Opposing Party and Weighing the Public Interest

45. “The final two factors of the test for a preliminary injunction are the balance of the equities and the public interest. The Court combines its analysis of these factors because ‘where the government is the party opposing the preliminary injunction, it’s interest and harm merge with the public interest.’” *In re Ga. Senate Bill 202*, 2023 WL 5334617, at *12 (N.D. Ga. Aug. 18, 2023) (Boulee, J.) (quoting *Swain v. Junior*, 958 F.3d 1081, 1091 (11th Cir. 2020)) (citing *Nken v. Holder*, 556 U.S. 418, 435 (2009)); see also *Alpha Phi Alpha Fraternity Inc. v. Raffensperger*, 2023 WL 7037537, at *138 (N.D. Ga. Oct. 26, 2023).

46. When weighing a burden on the right to vote against a public interest, “the Court must consider whether Plaintiffs established the following: (1) that their threatened injury outweighs any potential damage to Defendants that would be caused by the proposed injunction; and (2) that an injunction would not be adverse to the public’s interests, which, here, merge with those of the state.” *In re*

Ga. Senate Bill 202, 2023 WL 5334617, at *13. “[T]he Eleventh Circuit has stated that ‘even a temporary infringement of First Amendment rights constitutes a serious and substantial injury’ and that the government ‘*has no legitimate interest in enforcing an unconstitutional statute.*’” *Id.* at *13 (emphasis added) (quoting *KH Outdoor, LLC v. City of Trussville*, 458 F.3d 1261, 1272 (11th Cir. 2006)).

47. It is a “basic truth that even one disenfranchised voter—let alone several thousand—is too many.” *League of Women Voters of N.C.*, 769 F.3d at 244.

II. PLAINTIFFS’ STANDING: CONCLUSIONS OF LAW AND SUPPORTING FINDINGS OF FACT

A. Conclusion of Law No. 1: The Coalition for Good Governance Has Standing as an Organization

1. Conclusion of Law No. 1.A: The Coalition for Good Governance Has Established Its Own Injury in Fact Under a Diversion of Resources Theory

a) *Findings of Fact: The Coalition for Good Governance Has Demonstrated a Legally Cognizable Injury*

48. CGG has been forced to divert resources to oppose the requirement to use Dominion ImageCast X-Prime Touchscreen Ballot Marking Devices (“BMDs”) for in-person voting in Georgia. Trial Tr. Vol. 1 at 151:7-12 (Martin).

49. The harm CGG seeks to remedy is not based on unsupported or speculative notions, but is instead concrete, imminent, and affects each individual

CGG Member.⁴ See Section II.B.1.a; Section III.A.b.6.⁵

b) Findings of Fact: The Coalition for Good Governance Has Diverted Resources Away From Its Preferred Activities to Address Injuries Threatened to—and Suffered by—Its Members From Defendants’ Challenged Conduct

50. The mission of the CGG is “focused on constitutional liberties and individual rights specifically in terms of the First Amendment, due process, and equal protection under the law,” with a “focus[] on elections as well as Government transparency.” Trial Tr. Vol. 1 at 115:16-23 (Martin).

51. CGG’s mission also focuses on educating legislators, voters, and the general public regarding election integrity and election security issues. CGG works to inform legislative policies and to foster debate surrounding election issues. Trial Tr. Vol. 1 at 116:4-14 (Martin).

52. CGG has spent a “huge amount of [its] time” on this case and ending the requirement for in-person voters to vote using the ballot-marking devices that have been selected, administered, and maintained by Defendants. Trial Tr. Vol. 1

⁴ Members of CGG testifying at trial included Laura Digges (Trial Tr. Vol. 1 at 199:10-12), William Digges (Trial Tr. Vol. 2 at 40:6), Megan Missett (Trial Tr. Vol. 8A at 152:24), Jeanne Dufort (Trial Tr. Vol. 1 at 136:12), Aileen Nakamura (Trial Tr. Vol. 2 at 48:15), and Rhonda Martin (Trial Tr. Vol. 1 at 114:5-6). They are referred to herein as “CGG Members.”

⁵ The Court held at summary judgment that CGG’s claimed injury is a “concrete, legally cognizable Article III injury.” Dkt. 1705 at 86. No facts introduced at trial suggest the Court’s conclusion should change.

at 151:7-12 (Martin).

53. CGG has further been forced to spend large amounts of resources to investigate the Coffee County breaches of the current Georgia voting system and related investigations and their implications for election security in Georgia. *See, e.g.,* Coalition Pl. Ex. 10.⁶

54. In addition to time spent purely on litigation for this case, CGG has also spent large amounts of time and resources on related activities aimed at addressing its injury, including filing formal petitions for rule changes with the State Election Board (“SEB”) (whose members are Defendants here), as well as hosting educational webinars for county election officials and voters relating to issues in this case, all to counteract the injury imposed by the current election system in Georgia. Trial Tr. Vol. 15 at 162:7-23 (Marks); Coalition Pl. Ex. 5; Coalition Pl. Ex. 6 (CGG proposed election rules amendments regarding mitigation of CISA BMD vulnerabilities); *see also* Coalition Pl. Ex. 2 at 3-4 (CGG complaint

⁶ CGG has established standing based on a diversion of resources theory in light of the facts adduced at trial. *See* Section II.A.1. The Court, however, may also consider the facts it relied on to reach the same conclusion at summary judgment, including the declarations of Marilyn Marks. *See* Dkt. 1071-2 ¶¶ 9-11; Dkt. 1619 ¶¶ 25-31; Dkt. 1618 ¶¶ 25-29. Standing is a jurisdictional issue separate and apart from the merits of Plaintiffs’ claims, *see Kawa Orthodontics, LLP v. Sec’y, U.S. Dep’t of the Treasury*, 773 F.3d 243, 245 (11th Cir. 2014)), and courts have historically considered facts beyond the trial record when determining jurisdictional issues. *See Petition of Carmen*, 165 F. Supp. 942, 950 (N.D. Cal. 1958); *see also Ex parte Van Moore*, 221 F. 954, 963-66 (D.S.D. 1915); *Ex parte Pero*, 99 F.2d 28, 30-32 (7th Cir. 1938).

to the SEB regarding the Secretary of State’s failure to comply with Georgia’s auditing requirements.); *see also* Curling Pl. Ex. 577 (SEB website overview).

55. Because of this case and the associated resource constraints, CGG has been forced to stop most of its other activities. Trial Tr. Vol. 1 at 120:15-121:5 (Martin). CGG does not have sufficient funding and resources to engage with this case and participate in many of its other commitments related to its mission. *Id.*

56. CGG has been unable to engage in many of its prior commitments, including educating legislators on election issues, educating voters, attending speaking engagements, and coordinating with other states regarding nationwide election issues. Trial Tr. Vol. 1 at 121:10-123:23 (Martin). CGG has also been unable to invest to keep its website updated or adequately engage in fundraising. *Id.*

57. CGG has been unable to participate in debates surrounding key election topics—such as internet voting and ranked-choice voting—because of the demands of this case. Trial Tr. Vol. 15 at 161:8-162:6 (Marks). CGG has had to turn down requests to help educate voters on the problems of internet voting.⁷ *Id.*

⁷ The Eleventh Circuit held in 2022 that Coalition Plaintiffs had “credibly” asserted that Defendants’ challenged policy “will force them to divert personnel and time to educating volunteers and voters and to resolving problems that the policy presents on Election Day,” at least through the appeal of the 2020 preliminary injunction hearings. *Curling v. Raffensperger*, 50 F.4th 1114, 1121 (11th Cir. 2022) (internal quotation marks omitted). The facts that the Eleventh Circuit relied on to reach

2. Conclusion of Law No. 1.B: CGG’s Injury Is Traceable to Defendants

a) Findings of Fact: Defendants Are Responsible for Selecting, Administering, and Maintaining Georgia’s Current BMD Voting System Statewide, Including Security of the Equipment and Software

58. Under Georgia law, all federal, state, and county general primaries and general elections, as well as special primaries and special elections in the State of Georgia, “unless otherwise authorized by law,” must be “conducted with the use of scanning ballots marked by electronic ballot markers.” O.C.G.A. § 21-2-300(a)(2).

59. The Secretary of State is responsible for approving or discontinuing the use of Georgia’s voting systems, O.C.G.A. §§ 21-2-379.2(a), -379.2(b), -368(a), -368(b), and for determining the voting equipment to be used in Georgia’s elections, O.C.G.A. § 21-2-300. The SEB is responsible for promulgating rules and regulations to obtain uniformity in election practices, O.C.G.A. § 21-2-31(1), which includes preelection system testing and post-election audit practices. Defendants’ enforcement of the statutes and rules that require the uniform use of BMDs for all in-person voting subjects Plaintiffs to the injuries that give them standing.

this conclusion remain unrefuted. As a result, the legal holding based on those unrefuted facts is binding as law of the case. *Schiavo ex rel. Schindler v. Schiavo*, 403 F.3d 1289, 1291 (11th Cir. 2005).

60. On July 29, 2019, Secretary of State Raffensperger, a Defendant in this case, chose to enter into a contract with Dominion Voting Systems, Inc. to provide a statewide voting system comprising ImageCast X-Prime Touchscreen Ballot Marking Devices (“BMD(s)”), associated HP LasertJet Pro M402dne laser printers (“BMD Printers”), the Democracy Suite Election Management System, including associated hardware and software components (“EMS”), ImageCast Precinct Tabulators (“ICP(s)”), ImageCast Central Scanners (“ICC(s)”), ImageCast Molded Plastic Ballot Box (“Ballot Box”), KNOWiNK Electronic Pollbooks (“Pollbooks”), and associated implementation and maintenance services (collectively referred to as “Georgia’s BMD System”). Curling Pl. Ex. 47 at 48-63.

61. All voting equipment used by counties in Georgia’s BMD System is required to be certified by the Secretary of State. Dkt. 1645, SOS 30b6 (Sterling) Dep. at 198:25-199:18.

62. The Secretary of State has taken the position and informed counties in Georgia that the election equipment selected by the Secretary of State for use in Georgia elections cannot be modified, changed, or upgraded without authorization from the Secretary of State. In so doing, the Secretary of State prevents counties from making any such changes to the BMDs that he selected and requires to be used statewide, including the sorts of changes to BMDs and BMD Printers that

Plaintiffs seek in this case. Curling Pl. Ex. 194; Ga. Comp. R. & Regs. 183-1-12-.05; Trial Tr. Vol. 11 at 257:3-24 (Evans).

63. Georgia law permits “any primary or election in which the use of voting equipment is impossible or impracticable . . .” to be “conducted by paper ballot in the manner provided in Code Section 21-2-334,” as determined by the county superintendent. O.C.G.A. § 21-2-281. Defendants have taken the position that *only they*, not the county superintendent, may invoke that statutory provision if the current electronic voting system becomes “inoperable or unsafe” and only if the Secretary of State “feels that [the electronic voting system] cannot be trusted to accurately deliver election results.” Curling Pl. Ex. 406; Trial Tr. Vol. 3 at 190:18-192:12 (Harvey). Despite SEB Rules facilitating the use of hand-marked paper ballots by superintendents for backup purposes (Ga. Comp. R. & Regs. 183-1-12-.11(2)(c)-(d)), the Secretary of State’s Office has informed counties that they may not make the decision on their own to use hand-marked paper ballots in lieu of requiring in-person voters to use BMDs in their current form. Curling Pl. Ex. 406; Trial Tr. Vol. 3 at 190:18-192:12 (Harvey). Defendants offered no evidence indicating that this policy has changed or that they have since communicated a contrary policy to Georgia counties, thereby establishing that this remains Defendants’ policy. Trial Tr. Vol. 16B at 75:10-76:15 (Sterling).

64. In fact, when Athens-Clarke County attempted to move to hand-

marked paper ballots because of privacy concerns with the BMDs chosen by the Secretary of State, the SEB (whose current or former members are Defendants here) levied penalties against the county. Trial Tr. Vol. 6A at 63:7-63:16, 65:16-66:5 (Mashburn); Trial Tr. Vol. 16B at 77:17-78:6 (Sterling).

65. The Secretary of State's Office has taken the position that it is "currently equipped to assist counties with conducting elections using the Dominion system," and it has opposed "more autonomy" for Georgia counties to ensure they remain under the Secretary of State's control. Curling Pl. Ex. 607. Through a 104-page Poll Worker Manual prepared by the Secretary of State's Office, the Secretary of State dictates in granular detail the numerous specific steps that Defendants require the counties to take to administer each election using Georgia's BMD System the Secretary of State selected and requires counties to use for elections statewide. Defs. Ex. 1242; Trial Tr. Vol. 11 at 186:15-20 (Evans).

66. The Secretary of State's Office also provides specific instructions to the counties regarding the use of voting equipment; for example, if a seal on a BMD is missing or taken off, counties "were always told" by the Secretary of State's Office to return that BMD to the Secretary of State's Office because it would pose a security hazard (although this is not actually done in at least many instances, as detailed below). Dkt. 1815-2, J. Barnes Dep. at 73:2-75:9. Similarly, when counties have encountered functional errors indicating that a machine is

malfunctioning, they have been instructed by the Secretary of State's Office to immediately turn off and seal the device, confirming the Secretary of State's Office's control over the counties and responsibility for election security. Trial Tr. Vol. 12 at 38:15-39:5 (M. Barnes).

67. Counties are required to follow the Secretary of States' Office's directives and policies, which are enforceable by Defendants. "[G]enerally speaking, [if] the Secretary of State's Office says to do something, [the counties] generally do it because they don't want to go before the State Election Board for having done something wrong." Dkt. 1645, SOS 30b6 (Sterling) Dep. at 205:23-206:1.

68. The Secretary of State's Office will "step in if a county is underperforming" with respect to elections, further confirming its control over counties regarding the administration of Georgia's BMD System, including its security. Curling Pl. Ex. 607. The Secretary of State's Office cites this as a reason why it opposes giving counties "more autonomy" in determining whether to use BMDs for in-person voting, despite the discretion afforded to the counties under Georgia law. *Id.*

b) Findings of Fact: The Secretary of State's Office Is Responsible for Securing Georgia's BMD System and Investigating Potential Security Breaches

69. The Secretary of State's Office is responsible for the overall security

of the voting system:

- a. According to Gabriel Sterling, the Secretary of State's Chief Operating Officer, the factors that the Secretary of State's Office considers for "election security" include: (1) cybersecurity, (2) chain of custody, (3) physical security, and (4) training. Trial Tr. Vol. 15 at 228:2-228:8. No election security witness defined "election security" in this way, and neither Mr. Sterling nor any other witness cited any support for this definition.
- b. The Secretary of State's Office has no coherent or consistent position on who is responsible for the cybersecurity of Georgia's BMD System, sometimes suggesting it is Dominion, other times suggesting it is the counties, and still other times suggesting it is the Secretary's Center for Election Systems (CES), the head of which denied any such responsibility. Trial Tr. Vol. 5A at 101:5-14 (Beaver); *see* Section III.A.1.a.(2).(b). Ultimately, it is unclear who, if anyone, is responsible for the critical cybersecurity of Georgia's highly vulnerable BMD System, which has been breached several times in at least one county. *See* Section III.A.1.a.(2).(h).

- c. The Secretary of State's Office does not consistently follow Dominion's security recommendations about the operation of the BMDs, instead making its own decisions about the security of Georgia's BMD System. *See* Section III.A.1.a.(2).(b) ¶ 118. The Secretary of State's Office itself claims to "weigh the risks" to "figure out what best practices are." Trial Tr. Vol. 11 at 214:2-7 (Evans).
- d. The Secretary of State's Office makes decisions affecting cybersecurity without following the advice of cybersecurity experts and *directly against* the advice of numerous of its own election security experts and computer science personnel, including its own Chief Information Security Officer, Chief Information Officer, and cybersecurity consultant, Theresa Payton, and her organization Fortalice. *See* Section III.A.1.a.(2).(e).
- e. Counties rely on the Secretary of State's Office for the cybersecurity of Georgia's BMD voting equipment, contrary to Defendants' unsubstantiated and conflicting allegations. Dkt. 1815-2, J. Barnes Dep. at 69:11-18.
- f. The Secretary of State's Office also has policies with respect to

chain of custody, physical security, and training, which it requires the counties to follow. *See* Section III.A.1.a.(2).(f).

70. The Secretary of State's Office is also responsible for investigating issues pertaining to the security of Georgia's BMD System and has established policies and practices for doing so. Trial Tr. Vol. 7B at 16:22-25 (Watson); O.C.G.A. § 21-2-31(5) (SEB must investigate or authorize the Secretary of State to investigate election-related issues).

71. Such investigations are conducted by the Secretary of State's Office's Investigations Division. Trial Tr. Vol. 7B at 17:10-14 (Watson).

72. Generally, investigations are *supposed* to be conducted as follows:

- a. Depending on the complexity of the investigation, investigations may initially require site visits to review documents or gather statements. Trial Tr. Vol. 7B at 19:22-21:8 (Watson).
- b. More complex investigations could require multiple site visits, as well as reviewing thousands of documents. Trial Tr. Vol. 7B at 19:22-21:8 (Watson).
- c. After an investigator completes this initial review of the case, the case file is submitted to supervision for review. Trial Tr. Vol. 7B at 19:22-21:8 (Watson).

- d. After this review, the case file is designated pending, and awaits a presentation to the SEB, where investigators make recommendations to the SEB for actions, such as transfer to the Attorney General's office. Trial Tr. Vol. 7B at 19:22-21:8 (Watson).
- e. The SEB can act on the recommendations that are given to them, or they can make their own case determination, depending on the findings of the investigation. Trial Tr. Vol. 7B at 19:22-21:8 (Watson); *see also* Curling Pl. Ex. 597 at 1-2.

73. The Secretary of State's Office exercised its responsibility to investigate potential security breaches on numerous occasions:

- a. It investigated suspected remote access of a laptop computer used by a Fulton County election worker. Curling Pl. Exs. 254 & 294. The Secretary of State's Office took these concerns seriously enough that it promptly alerted senior officials in the office, collected the laptop at issue, and had Fortalice examine the laptop in question—*including specifically to look for the presence of malware on the equipment*. Trial Tr. Vol. 7B at 29:3-8 (Watson); Curling Pl. Ex. 294 at 3 (Fortalice report documenting “malware review” among other tests).

- b. It investigated claims of voting machines and election databases being left open and not secured with zip ties, as well as broken seals and ballots being left on printers. Trial Tr. Vol. 7B at 35:25-37:15 (Watson); Curling Pl. Ex. 100.
- c. It investigated an email from a “random guy from Seattle” claiming that he could “hack [Georgia’s] voting machines,”— and the threat was taken so seriously that it was flagged for the Secretary himself within minutes, and officials conducted their own online searches for information. Curling Pl. Ex. 587; Trial Tr. Vol. 4 at 79:2-80:12 (Germany).
- d. It investigated claims that election officials in Spalding County planned to hire SullivanStrickler to image election equipment, and it required the county to forgo that access, which it warned would be unlawful and could not occur without Defendants’ permission. Curling Pl. Ex. 194; Trial Tr. Vol. 12 at 47:6-15 (M. Barnes).
- e. It replaced the EMS server in Treutlen County upon learning that Misty Hampton had been hired by the county after she facilitated the breaches of Georgia’s BMD System in Coffee County in January 2021. Trial Tr. Vol. 12 at 134:3-7 (M.

Barnes).

74. Counties rely on the Secretary of State's Office to investigate election security issues. Dkt. 1630-17, J. Barnes Dep. at 121:15-122:2; Dkt. 1815-18, Coffee Cnty. BOE 30b6 (Stone) Dep. at 133:21-134:2.

3. Conclusion of Law 1.C: CGG's Injury Is Redressable by a Favorable Decision

a) Findings of Fact: The Court Can Order Injunctive Relief that Would Remedy CGG's Injury

75. Enjoining the use of BMDs as currently selected, administered, and required statewide by Defendants as the standard method for in-person voting will redress CGG's organizational standing injuries because CGG will no longer have to divert its resources from postponed or deprioritized projects to oppose the required use of BMDs by all in-person voters.⁸ Trial Tr. Vol. 1 at 120:9-124:123 (Martin).

⁸ During closing argument, given the proven risks to the approaching 2024 elections, Plaintiffs urged the Court to consider other forms of injunctive relief it could order immediately, pending the Court's final order of relief, for all in-person voters in Georgia: (1) ordering Defendants to comply with existing Georgia law (to protect the constitutional right to vote in Georgia) by developing a genuine, robust, actionable backup plan to deploy hand-marked paper ballots statewide in the event BMDs become impossible or impracticable to use; and (2) enjoining Defendants from preventing counties from exercising their statutory authority under existing Georgia law to choose to use hand-marked paper ballots in lieu of BMDs if such BMDs become impossible or impracticable to use. Trial Tr. Vol. 17 at 48:1-49:1. These and other forms of immediate injunctive relief are included in the Proposed Order below. *See* Section V, *infra*.

B. Conclusion of Law No. 2: The Individual Plaintiffs Have Standing (Including CGG Members)

1. Conclusion of Law No. 2.A: The Individual Plaintiffs and CGG Members Have Established Their Own Injury in Fact

a) Findings of Fact: Each Plaintiff and CGG Member Has a Non-Speculative, Legally Cognizable Injury

76. Each Individual Plaintiff and CGG Member has no way of knowing whether the printed BMD ballot—the ballot of record—accurately captures their selections as expressed on the BMD touchscreen, leaving them unable to discern whether their vote will be counted as cast and with no basis that it will be when they insert the ballot into the scanner:⁹

- a. Jeffrey Schoenberg testified that he is unable to verify his selections when using a BMD because the QR code is what is tabulated—he explained the futility of reviewing an unverifiable BMD ballot. Trial Tr. Vol. 1 at 72:16-25 (Schoenberg). He also explained how easy it is to forget to review the human-readable portion of a BMD ballot—as he has done himself—because the nature of the process feels like a

⁹ In using the term “counted as cast,” Plaintiffs are not referencing the ability to know that any particular ballot will in fact be tabulated in a particular way. Rather, it refers to the ability of a voter to verify that the vote of record that will be tabulated is in fact an accurate record of the voter’s selections made on the touchscreen (for BMD ballots) or with a pen (for hand-marked paper ballots). *See, e.g.,* Trial Tr. Vol. 9 at 133:2-10, 135:9-21, 169:4-16 (Stark).

voter's vote has been cast when the selections are made on the BMD. *Id.* at 88:15-89:4 (Schoenberg).

- b. The State Election Director acknowledged this failing associated with voting using BMDs based on reports that voters sometimes do not even place their ballots into scanners for tabulation because they mistakenly believe their votes were cast on the BMDs. Trial Tr. Vol. 11 at 244:4-18 (Evans).
- c. Donna Price voted on a BMD in the November 2023 election and was unable to verify her selections. She explained she cannot verify that the QR code is an accurate expression of her selections, and that the text of the human-readable portion of the ballot of record is small and sometimes illegible (including abbreviations that are incomprehensible) for Plaintiffs. Trial Tr. Vol. 2 at 12:12-15, 16:21-17:13, 19:20-23, 34:4-21 (Price).
- d. Ms. Price further explained that because of her inability to verify her ballot (including the unreadable QR code), and more general serious, unmitigated security failings with Georgia's BMD System, she generally votes absentee by-mail, but that doing so is unduly burdensome and has left her disenfranchised on two occasions. Trial Tr. Vol. 2 at 24:1-26:11 (Price); *see*

also Section III.A.1.c.

- e. Donna Curling testified that, based on her experience, she opts to vote absentee by-mail because, unlike when voting on a BMD, “at least then there is a permanent ballot of record” reflecting her selections, assuming the process for receiving and mailing an absentee ballot operates as it should. Trial Tr. Vol. 5A at 12:1-7 (Curling). But she too has been disenfranchised when voting absentee. Trial Tr. Vol. 5A at 10:13-25 (Curling).
- f. Ms. Curling explained that, when voting on a BMD, the “vote is translated into a QR code, which no human can read,” leaving her with “no idea” whether the encoded selections that will be tabulated match her actual selections. Trial Tr. Vol. 5A at 12:12-19 (Curling).
- g. Jeanne Dufort is unable to verify her ballot when she votes in-person using BMDs as currently implemented in Georgia: the QR code is what is tabulated, and the QR code is not human-readable. Trial Tr. Vol. 1 at 142:9-22 (Dufort).
- h. Megan Missett has difficulty reviewing and verifying the human-readable selections printed on the BMD ballot, as the printing on the ballot is small, and the ballots are often long,

with many contests, and she cannot verify that her printed ballot (the ballot of record) accurately reflects her actual selections, leaving her without confidence that her vote will be counted as cast. Trial Tr. Vol. 8A at 154:4-155:14, 167:18-168:17 (Missett).

- i. Aileen Nakamura cannot verify that the QR code contains her selections made on the touchscreen, or that the human-readable portion of a BMD ballot accurately reflects her selections because she cannot memorize the entire ballot content, as would be required to be able to review and verify the human-readable portion of the BMD-printed ballot. Trial Tr. Vol. 2 at 50:9-15, 56:4 -17; *see also* Section III.A.1.a.(1).
- j. William Digges cannot know that his vote will be counted as cast when voting in-person on BMDs, as there is not a “permanent,” and “verified” record of his vote with a BMD. Trial Tr. Vol. 2 at 41:3-17 (W. Digges).
- k. Laura Digges cannot know that her vote is counted as cast when voting on a BMD as currently implemented in Georgia because she cannot verify that the QR code contains her selections expressed on the touchscreen. When she votes using hand-

marked paper ballots, she “can see [her] vote on the ballot;” when she votes on BMDs as currently implemented Georgia, she cannot. Trial Tr. Vol. 1 at 201:3-9, 207:1-6 (L. Digges).

77. When required to vote on a BMD, Individual Plaintiffs and CGG Members also experience the non-speculative injury of having to go through the burdensome and difficult mandatory process of reviewing their BMD ballots twice, once on screen in the software application and again after the ballot is printed, this requires memorizing the entire ballot content, which is not feasible with many long, dense Georgia ballots. Trial Tr. Vol. 2 at 50:5-15, 56:4-57:2 (Nakamura); Trial Tr. Vol. 8A at 155:6-8 (Missett); *see also* Section III.A.1.a.(1). Indeed, that Defendants acknowledge the need for—and even require—this second review concedes that they fully anticipate that the BMDs as currently implemented may not accurately capture a voter’s selections on the printed ballot, which is the voter’s official ballot of record.

78. In addition, in certain polling places, CGG Members are threatened with invasions of their legally cognizable interests in “voting in absolute secrecy so that no person can see or know any other elector’s votes,” O.C.G.A. § 21-2-379.22(5), and in voting by “secret ballot,” Ga. Const. art. II, § 1, ¶ 1:

- a. Ms. Dufort cannot protect the privacy and secrecy of her vote if she votes by BMD as currently implemented in Georgia based

on her experience observing elections in polling places throughout Georgia. Trial Tr. Vol. 1 at 141:5-142:8 (Dufort). The secrecy of her ballot is of paramount importance to her. *Id.* at 139:10-25 (Dufort).

- b. Mr. Digges is also injured by his loss of ballot secrecy when voting on a BMD touchscreen. Trial Tr. Vol 2 at 41:25-42:7 (W. Digges).
- c. Ms. Nakamura has experienced the violation of ballot secrecy because of the large touchscreen displays of voters' votes. Trial Tr. Vol. Vol. 2 at 50:1-5, 53:6-12 (Nakamura). Her apprehension at being deprived of secrecy in voting is reasonably based on her past experience of vandalism on her property that occurred when she put up a political yard sign. *Id.* at 53:13-54:7 (Nakamura). She wishes to keep her vote secret. *Id.* at 49:20-23, 52:10-12 (Nakamura).

79. The Individual Plaintiffs and CGG Members who choose to avoid the injuries associated with voting in-person using BMDs in Georgia must incur the burdens of voting by absentee ballot.¹⁰

¹⁰ This Court has already recognized that absentee by-mail voting in Georgia's current system entails "potential uncertain postal delivery issues, untimely

- a. Ms. Dufort undergoes the burdens of voting by absentee ballot. Trial Tr. Vol. 1 at 146:8-148:12 (Dufort). Such burdens include the inability to legally mark her absentee ballot on Election Day (*id.* at 149:5-6), the inability to have last minute information about the election before voting (*id.* at 149:1-4), and the inability to associate and engage with her neighbors at the polling place on Election Day (*id.* at 148:19-25). The Secretary of State's Office emphasizes the importance of this engagement with neighbors and voting in person for Georgia voters in particular because of the state's specific history. Curling Pl. Ex. 503 at 36:12-36:32.
- b. Dr. Missett has had problems obtaining absentee ballots. Trial Tr. Vol. 8A at 153:21-154:3 (Missett).
- c. Ms. Nakamura votes by absentee ballot. Trial Tr. Vol. 2 at 49:20-23 (Nakamura). She has had significant difficulties in obtaining an absentee ballot. *Id.* at 51:9-23 (Nakamura).
- d. Ms. Digges undergoes the inconveniences of voting an absentee

processing by the registrar's office, signature matches, etc.," as well as the "significant burden resulting from the accuracy and voter invalidation issues that affect Dominion's scanner/tabulators and adjudication software used for determining voter intent and tallying hand-marked absentee ballots." Dkt. 964 at 83.

ballot to try to avoid voting on the BMD equipment, including the application process, the tracking process, and the loss of the social association of participating with her community, the inability to know that the ballot was cast, and the effort of driving to deliver the ballot. Trial Tr. Vol. 1 at 200:25-202:23 (L. Digges).

- e. Mr. Digges generally votes by absentee ballot. Trial Tr. Vol. 2 at 40:23-24 (W. Digges). He undergoes the inconveniences of absentee ballot voting to try to avoid voting on a BMD. *Id.* at 40:23-41:2. Such inconveniences include the loss of the community experience of voting in person. *Id.* at 42:15-19.
- f. Both Ms. Price and Ms. Curling have faced significant administrative burdens and have been disenfranchised when voting by absentee ballot in Georgia. *See* Section III.A.1.c.

80. The Help America Vote Act (HAVA) creates a legally cognizable individual interest, possessed by each in-person voter, to “verify (in a private and independent manner) the votes selected by the voter on the ballot before the ballot is cast and counted.” 52 U.S.C. § 21081(a)(1)(A)(i). Voters must also be able to privately and independently “change the ballot or correct any error before the ballot is cast and counted (including the opportunity to correct the error through the

issuance of a replacement ballot if the voter was otherwise unable to change the ballot or correct any error).” 52 U.S.C. § 21081(a)(1)(A)(ii). These interests are invaded by the requirement for in-person voters to use printed BMD ballots containing unreadable QR codes for tabulation, which make it impossible for in-person voters to verify and, if needed, correct their selections as HAVA provides. *See* Section III.A.1.a.(1). The same interests are invaded by the required use of dense, complicated, incomplete, and confusing human-readable text on BMD ballots, which is not even used for tabulation except in very rare circumstances. *See* Section III.A.1.a.(1). Voters who do spot an error on the human readable portion of the printed ballot must involve a poll worker, surrender their printed ballot, and reveal the character of any error in order to be able to cast a corrected ballot, which invades the voter’s statutory interest in being able to make private corrections under HAVA. Ga. Comp. R. & Regs. 183-1-12-.11(10)(b); Trial Tr. Vol. 16B at 181:11-23 (Appel).

2. Conclusion of Law 2.B: The Individual Plaintiffs’ and CGG Members’ Injury Is Traceable to Defendants

81. The same findings of fact supporting the traceability of CGG’s injury for the purposes of CGG’s standing support the traceability of the Individual Plaintiffs’ and CGG Members’ injury, as well. *See* Section II.A.2.

3. Conclusion of Law 2.C: The Individual Plaintiffs' and CGG Members' Injury Is Redressable by a Favorable Decision

a) Findings of Fact: The Court Could Order Injunctive Relief that Would Remedy the Individual Plaintiffs' and CGG Members' Injury

82. Enjoining the use of BMDs and BMD Printers as the required method for in-person voting will redress the Individual Plaintiffs' and CGG Members' injuries because they would be able to vote in-person without being forced to do so using BMDs and BMD Printers as they are currently implemented in Georgia. Trial Tr. Vol. 1 at 70:6-71:2, 72:16-73:8 (Schoenberg); Trial Tr. Vol. 2 at 42:24-43:6 (W. Digges); Trial Tr. Vol. 5A at 8:13-9:24 (Curling); Dkt. 1815-2, J. Barnes Dep. at 95:15-23, 96:5-24.

4. Conclusion of Law No. 2.D: The Individual Plaintiffs Have Standing Under the One Plaintiff Rule

a) Findings of Fact: All Curling and Coalition Plaintiffs Seek the Same Fundamental Relief

83. Curling Plaintiffs and Coalition Plaintiffs seek the same fundamental relief: an order enjoining the use of BMDs and BMD Printers as the required method for in-person voting in Georgia. Trial Tr. Vol. 2 at 27:4-28:4 (Price); Trial Tr. Vol. 8A at 167:18-168:17 (Missett); Trial Tr. Vol. 1 at 202:13-23 (L. Digges); Trial Tr. Vol. 2 at 42:24-43:2 (W. Digges); Trial Tr. Vol. 1 at 95:9-12

(Schoenberg); Trial Tr. Vol. 5A at 12:1-7 (Curling).¹¹

III. PLAINTIFFS' CONSTITUTIONAL CLAIMS: CONCLUSIONS OF LAW AND SUPPORTING FINDINGS OF FACT

A. Conclusion of Law No. 3: Voting on BMDs in Georgia as They Are Currently Implemented Imposes a Severe Burden on Plaintiffs' Right to Vote in Violation of the First and Fourteenth Amendments

1. Conclusion of Law No. 3.A: Under *Anderson-Burdick* Step One, the Burden on the Right to Vote Imposed on Voters Using Georgia's Current BMDs Is Severe

a) Findings of Fact: There Are Numerous Pervasive Security Problems with Georgia's BMD System that Impose a Severe Burden on Plaintiffs' Right to Vote When Voting on BMDs in the State

84. Plaintiffs demonstrated numerous pervasive problems with Georgia's BMD System that impose a severe burden on Plaintiffs' right to vote when voting on BMDs as currently implemented in Georgia. Those problems can be categorized as follows: (1) the lack of a voter-verified ballot of record that is a direct expression of the voter's selections, (2) Defendants' failure to implement critical election security measures, (3) Defendants' slow and ineffective response to security breaches in Coffee County, and (4) Defendants' insufficient remedial

¹¹ At summary judgment, this Court held that the One Plaintiff Rule applied to establish standing for Curling Plaintiffs based on CGG's standing. Dkt. 1705 at 108. The Court reasoned that Curling Plaintiffs "are seeking the identical core relief sought by the Coalition Plaintiffs and have not sought relief exceeding that core relief." Dkt. 1705 at 105. No evidence was introduced at trial that suggests the Court should reach a different conclusion now. The facts the Court relied on for its prior finding stand unrefuted today.

action taken in response to numerous undisputed, critical security vulnerabilities, including those CISA advised Defendants to mitigate as soon as possible nearly two years ago.

(1) Findings of Fact: Voters Using a BMD Lack a Voter-Verified Ballot of Record that Is a Direct Expression of Their Selections

85. Experts, including Dr. Wenke Lee (the SAFE Commission Cybersecurity Expert) and Dr. Juan Gilbert (Defendants’ retained expert in this litigation), agree that a voting system must be “software independent” to be reliable. A software independent voting system is one in which an undetectable change in software cannot cause an undetectable change in an election outcome. Defs. Ex. 1224 at PDF p. 21; Trial Tr. Vol. 14A at 57:5-13 (Gilbert).

86. Software independence requires voter verification of BMD-marked ballots; without voter verification, ballots can be changed without detection and the system is not software independent. Trial Tr. Vol. 14A at 58:9-58:12 (Gilbert).

87. The Secretary of State’s Office has taken the position that it is critically important for voters to verify their BMD-marked ballots to ensure their votes are accurately counted. Trial Tr. Vol. 16B at 65:20-66:7 (Sterling).

88. In Georgia’s BMD System, scanners—specifically the ICPs—tabulate in-person votes based on the selections contained within the QR codes on the printouts, which humans cannot read—not the selections that appear in the text

summary. Trial Tr. Vol. 7B at 156:3-9 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 13-14; Trial Tr. Vol. 1 at 72:16-72:25 (Schoenberg); Trial Tr. Vol. 2 at 276:9-16 (Harvey); Trial Tr. Vol. 12 at 13:3-20 (M. Barnes); Trial Tr. Vol. 12 at 200:22-201:8 (Adida); Dkt. 1815-8, Gilbert Dep. at 251:22-252:2, 252:5-9.

89. In the event of a recount (conducted pursuant to O.C.G.A. § 21-2-495) or an audit (conducted pursuant to O.C.G.A. § 21-2-498) to assess the outcome of an election, the human-readable text governs instead of the QR code tabulation. O.C.G.A. § 21-2-379.23(d).

90. Nevertheless, the SEB requires that recounts be conducted by scanners. Ga. Comp. R. & Regs. 183-1-15-.03(1). As a result, a mismatch between the QR code and the human-readable text on a BMD printed ballot may not be detected in a recount, leaving the Plaintiffs' and CGG Members' BMD votes at risk of being miscounted.

91. It is also highly unlikely that Plaintiffs' individual ballots would be counted in the manner specified for such audits or recounts, because audits and recounts occur very rarely.

- a. A hand count audit and a full machine recount were conducted in Georgia for the 2020 presidential contest but not since then; and risk-limiting audits are required by SEB rule in general

elections in even-numbered years. Ga. Comp. R. & Regs. 183-1-15-.04 (Audits); Trial Tr. Vol. 2 at 277:16-278:23 (Harvey); Trial Tr. Vol. 5A at 165:14-25, 229:7-21, 245:6-246:5 (Sterling); Trial Tr. Vol. 8A at 24:18-24 (Halderman); Trial Tr. Vol. 10A at 150:19-24 (Germany); Trial Tr. Vol. 12 at 170:5-171:3 (Adida). In addition, audits typically review only a relatively small statistical sample of ballots, not all ballots. Trial Tr. Vol. 12 at 150:23-151:17 (Adida); Trial Tr. Vol. 14A at 94:14-16 (Gilbert); Trial Tr. Vol. 13 at 153:20-154:9 (Kirk).

92. Even if Plaintiffs' ballots were part of a risk-limiting audit, even the most robust risk-limiting audits of hand-marked paper ballots can only assess election outcomes and *cannot* detect whether an individual voter's ballot was a direct expression of their selections. Curling Pl. Ex. 425 (Halderman Report) at 6-7, 37; Trial Tr. Vol. 8A at 14:25-15:2, 47:1-14 (Halderman); Trial Tr. Vol. 9 at 134:13-21 (Stark). Critically, the Defendants' retained expert, Dr. Juan Gilbert, and witness Ben Adida confirmed this point. Dkt. 1815-8, Gilbert Dep. at 223:19-224:22; Trial Tr. Vol. 14A at 87:17-88:3, 94:18-20, 112:17-20 (Gilbert); Trial Tr. Vol. 12 at 208:2-18, 209:7-21, 211:20-212:7 (Adida).

93. Risk-limiting audits require ***voter-verified ballots***. Trial Tr. Vol. 12 at 246:9-13 (Adida).

94. Plaintiffs demonstrated with unrebutted evidence that voters *cannot* reliably verify the human-readable text on their printouts, despite the legal requirement to do so, Ga. Comp. R. & Regs. 183-1-12-.11(2)(b), and that the vast majority of voters *do not* attempt to verify their printouts (whether because they know they are unable to do so, or for other reasons resulting from the burdens of the Georgia's Dominion BMD System as selected and administered by Defendants, including the unnecessary requirement to verify their selections two separate times—once with a summary report on the BMD screen, and a second time on the BMD-generated paper ballot that omits substantial information required for that verification, such as additional candidate names and the identification of specific questions posed to voters for a yes or no vote):

- a. During the voting process, once the voter selects the option to print, the BMD screen goes blank and no longer shows the voter's selections. Plaintiffs therefore cannot compare the human-readable portion of the printout side-by-side with the selections they made on the BMD, and would instead have to have memorized the contests and each of the available options to conduct a meaningful review of the printout that is not possible, practicable, or necessary. Trial Tr. Vol. 2 at 56:4-17 (Nakamura). This is especially so given that there may be

many contests—in the last Presidential election, Ms. Nakamura (voting in Fulton County) had 48 contests on her ballot. *Id.* at 56:24-57:2 (Nakamura).

- b. The human-readable portion of the ballot also includes only a truncated, incomplete summary of each race, making it challenging and even impossible for Plaintiffs to ensure the text summary on the ballot of record accurately reflects their selections (i.e., their individual votes). Trial Tr. Vol. 2 at 34:6-34:21 (Price); Trial Tr. Vol. 2 at 50:5-15 (Nakamura); Trial Tr. Vol. 9 at 136:11-137:18, 138:7-14 (Stark); Trial Tr. Vol. 14A at 99:10-23 (Gilbert).
- c. The text of the human-readable portion of the ballot of record is also small and sometimes illegible for Plaintiffs. Trial Tr. Vol. 2 at 19:20-23, 34:4-21 (Price); Curling Pl. Ex. 425 (Halderman Report) at 15 (sample ballot); Trial Tr. Vol. 7B at 156:3-12 (Halderman).
- d. Multiple witnesses testified to their own inability to correctly verify often lengthy ballots in Georgia elections. Trial Tr. Vol.1 at 143:10-15 (Dufort); Trial Tr. Vol. 2 at 50:9-15 (Nakamura); Trial Tr. Vol. 2 at 45:16-24 (W. Digges); Trial Tr.

Vol. 8 at 154:4-155:14 (Missett); Trial Tr. Vol. 2 at 34:6-34:21 (Price).

- e. Eyewitness testimony from poll watchers indicates that most voters do not review the printed ballot, confirming the challenges and even impossibility of doing so using the BMDs selected and administered by Defendants statewide. Trial Tr. Vol. 1 at 196:24-197:17 (Dufort); Trial Tr. Vol. 2 at 56:4-56:23 (Nakamura).
- f. A study conducted by the University of Georgia and commissioned by the Secretary of State observed real voters who voted on BMDs in the November 2020 general election. Curling Pl. Ex. 51 at 2. Based on over 4,000 observed voters, the study found that “more than half (51.3%) of voters undertook an insufficient check of their” printout at the voting booth, meaning they either did not check it or glanced at it for less than one second. *Id.* at 2-3. More than 80% of voters checked their printout for less than five seconds. *Id.* at 3.¹²
- g. The University of Georgia study is consistent with the larger

¹² This study also showed that Black, Hispanic, and Asian voters are less likely than others to verify their BMD ballots. Trial Tr. Vol. 14A at 93:5-11 (Gilbert).

scholarship on voter verification, which indicates that relatively few voters would be able to recall all their selections or even the name of every contest that they voted in after voting on a BMD like that selected and administered by Defendants statewide. Trial Tr. Vol. 9 at 136:11-137:18, 138:7-14 (Stark); *see also* Defs. Ex. 1287 at 11-13.

- h. Less than five seconds is nowhere near enough time to even review—much less verify—each of the selections on a typical ballot generated by the particular BMDs selected and administered by Defendants. Trial Tr. Vol. 14A at 99:10-23 (Gilbert); Curling Pl. Ex. 425 (Halderman Report) at 15 (sample ballot).
- i. Defendants’ retained expert, Dr. Gilbert, took 18 seconds to simply identify just a handful selections on a BMD printed ballot from an actual election—specifically, to identify which selections were not for a Republican candidate. Trial Tr. Vol. 14A at 99:10-23 (Gilbert); Curling Pl. Ex. 425 (Halderman Report) at 15 (sample ballot).
- j. As Plaintiffs’ expert Dr. Stark explained, a printed ballot in Georgia’s BMD System, as currently implemented and

administered, is at most a reflection of “what the machine did”; by contrast, in a hand-marked ballot system, the paper ballot of record is “unambiguously the voter’s expression of their preference” and a “direct reflection of what the voter did.” Trial Tr. Vol. 9 at 135:9-23, 140:2-3 (Stark).

(2) Findings of Fact: Defendants Have Repeatedly Failed to Implement Necessary Election Security Measures

95. According to Gabriel Sterling the factors that go into “election security” include: (1) cybersecurity, (2) chain of custody, (3) physical security, and (4) training. Trial Tr. Vol. 15 at 228:2-8 (Sterling). Defendants offered no evidence for this definition (indicating that it is nothing more than one of their own making as opposed to an established definition or standard widely accepted by recognized election security experts). Even under Defendants’ definition, they have failed to secure the right to vote in light of significant vulnerabilities in cybersecurity, chain of custody, physical security, and training with Georgia’s BMD System.

(a) Findings of Fact: Georgia’s BMD System Has Severe Cybersecurity Vulnerabilities

96. Dr. Alex Halderman is a leading cybersecurity expert who serves as the co-chair of Michigan’s Election Security Advisory Commission, by appointment of Michigan’s Secretary of State. Trial Tr. Vol. 7B at 130:12-19

(Halderman).¹³

97. Dr. Halderman has also worked closely with CISA regarding election security. Dr. Halderman has collaborated with CISA in connection with election vulnerability assessments. Trial Tr. Vol. 7B at 137:2-22 (Halderman).

98. Dr. Gilbert, Defendants' retained expert on related voting issues, acknowledged that if he were asked to name "someone to evaluate the security of [an election system] to find vulnerabilities," Plaintiffs' experts Dr. Halderman and Dr. Appel would be "at the top of my list." Dkt. 1815-8, Gilbert Dep. at 144:8-17.

99. Dr. Halderman determined that Georgia's ICX BMDs suffer from "critical vulnerabilities" that can "be exploited to subvert all of [the ICX BMD's] security mechanisms." Curling Pl. Ex. 425 (Halderman Report) at 4-5; Trial Tr. Vol. 7B at 214:25-215:20 (Halderman); Trial Tr. Vol. 8A at 41:1-41:7 (Halderman). Dr. Halderman documented these vulnerabilities, which are discussed below, at length in his July 1, 2021 report. Curling Pl. Ex. 425 (Halderman Report) at 6-7, 20-55.

100. At the Curling Plaintiffs' request, the Court authorized the Curling Plaintiffs to share Dr. Halderman's report with the Cybersecurity and Infrastructure

¹³ This Court has previously qualified Dr. Halderman as an expert in cybersecurity, and Defendants introduced no new facts at trial to challenge his qualifications. *See* Dkt. 964 at 145, Dkt. 1705 at 9, 35-36. Defendants also did not object to Dr. Halderman being qualified as an expert in cybersecurity at trial. Trial Tr. Vol. 7B at 117:19-21.

Security Agency (CISA), a component of the U.S. Department of Homeland Security that serves as the national coordinator for critical infrastructure security, through what is called a coordinated vulnerability disclosure. *See* Trial Tr. Vol. 7B at 129:19-130:10 (Halderman).

101. When conducting this type of review, CISA conducts an investigation, generally including conferring with the manufacturer of a product to confirm how the technology works, to assess whether the reported vulnerabilities are accurate. Trial Tr. Vol. 7B at 135:22-137:22 (Halderman).

102. Once CISA validates and confirms a vulnerability, it assigns it a CVE (common vulnerabilities and exposures) number, which serves as an industry-wide form of tracking vulnerabilities in technology products. Trial Tr. Vol. 7B at 134:9-24 (Halderman).

103. After its review of Dr. Halderman's report, CISA issued and posted its public ICS Advisory addressing "Vulnerabilities Affecting Dominion Voting Systems ImageCast X" on June 3, 2022 ("CISA Advisory"). Curling Pl. Ex. 89; Trial Tr. Vol. 7B at 130:22-132:3 (Halderman).

104. The CISA Advisory confirmed and validated the vulnerabilities identified by Dr. Halderman in his July 2021 report. Curling Pl. Exs. 89, 425 (Halderman Report); Trial Tr. Vol. 5A at 188:5-12 (Sterling); Trial Tr. Vol. 7B at 130:22-132:3, 137:25-138:7 (Halderman).

105. The CISA Advisory (Curling Pl. Ex. 89) specifically outlined ten vulnerabilities, which Dr. Halderman described in further detail in his testimony:

- a. **(1) Safe mode is accessible and allows installation of malware (CVE-2022-1742):** As described further below, Dr. Halderman demonstrated that it is possible to easily reboot a BMD into “safe mode” by holding down the power button (such as using a pen). Safe mode bypasses normal election software and allows access to the underlying Android operating system, including the “terminal” application. Trial Tr. Vol. 7B at 135:11-19, 141:16-149:9 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 46-47. That a device could be rebooted into safe mode in this way was publicly known before Dr. Halderman even authored his report. Trial Tr. Vol. 7B at 149:10-24 (Halderman).
- b. **(2) Terminal is accessible and allows installation of malware (CVE-2022-1741):** The terminal application is a program installed on the BMD that can be accessed by a bad actor to install malware (such as by rebooting into safe mode or using a forged voter card). It allows for complete control of the system. As just one example, it allows someone to type in commands,

including the “su” command that permits super user access (described further below). Trial Tr. Vol. 7B at 144:11-145:6, 151:17-152:5 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 43. As described further below, Dr. Halderman also demonstrated this vulnerability after rebooting the BMD into safe mode using a pen. *See* Section III.A.1.a.(2).(a) ¶ 107.

- c. **(3) Anyone can forge county-wide poll worker cards (CVE-2022-1746):** Anyone with access to a single poll worker card and the corresponding PIN can extract secret keys and create a forged poll worker card that can be used to alter ballot definitions, forge QR codes, or modify election results on scanner memory cards. Trial Tr. Vol. 7B at 157:17-158:22 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 28-29. This requires no special tools—the programmable smart cards can be purchased online for around \$10, and a smart card reader can be purchased on Amazon for around \$20. Trial Tr. Vol. 7B at 158:1-22 (Halderman). All poll worker cards throughout a county use a single PIN for any given election. Trial Tr. Vol. 11 at 82:16-25 (Evans).
- d. **(4) Anyone can forge voter cards that allow infinite voting**

(CVE-2022-1747): Anyone can forge voter cards using the same process as the forged poll worker cards, needing only programmable smart cards and a smart card reader that are easily purchased online. Forged voter cards can allow a user to circumvent the usual restriction of allowing only one ballot to be printed, such that an attacker could print as many ballots as they want. Trial Tr. Vol. 7B at 158:23-160:8 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 30-31.

- e. **(5) Anyone can forge technician cards for all BMDs that allow installation of malware (CVE-2022-1745):** Forging a technician card does not require access to any non-public information, just programmable smart cards and a smart card reader that can be purchased online. Trial Tr. Vol. 7B at 158:1-11, 158:15-22, 162:8-23 (Halderman). As described further below, Dr. Halderman demonstrated how a forged technician card can be used to access the BMD's operating system, change system settings, edit or delete audit log files, gain super user access, and inject malware that can flip votes in a variety of ways. *Id.* at 160:10-1-170:18 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 29-30.

- f. **(6) Alt-Tab allows installation of malware (CISA Advisory, Section 2.1):** By connecting a USB keyboard and pressing the Alt and Tab keys together, an attacker can switch to other applications, including the File Manager and Settings applications, which can then be used to install malware. Trial Tr. Vol. 7B at 173:17-174:19, 177:4-181:22, 184:7-187:14 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 41-44. As described further below, Dr. Halderman demonstrated how exploiting this vulnerability could be automated using a device called a “Bash Bunny,” which emulates a USB keyboard and sends a series of scripted keystrokes to the computer to which it is connected. *See* Section III.A.1.a.(2).(a) ¶ 110.
- g. **(7) Inadequate application signing allows installation and spreading of malware (CVE-2022-1739):** Because Georgia’s ICX BMDs do not require that installed applications be digitally signed by a trusted source, an attacker can install malicious programs and malware. Trial Tr. Vol. 7B at 173:17-174:18, 177:4-181:22, 184:7-187:25 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 32-33. As described further below, Dr. Halderman demonstrated this vulnerability as part of

an attack using a “Bash Bunny” device that changed the QR codes such that they did not reflect the voter’s selections on some, but not all, ballots. *See* Section III.A.1.a.(2).(a) ¶ 110.

- h. **(8) Zip Slip vulnerability allows malware to spread from EMS (CVE-2022-1743):** The software on Georgia’s ICX BMDs contains a critical vulnerability known as the “Zip Slip” vulnerability. This vulnerability can be exploited by an attacker to spread malware from the EMS by modifying the election definition file. Then, when the BMD is set up for an election in the ordinary course, the modified election definition file can be used to overwrite other data and software on the BMD. Trial Tr. Vol. 7B at 196:22-197:16 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 50.
- i. **(9) Malware can obtain superuser access (CVE-2022-1744):** Using the terminal application described above, an attacker can use the “su” command to gain super user access, meaning full control of the BMD and everything on it. Trial Tr. Vol. 7B at 162:8-23 (Halderman). Once an attacker gains super user access, the attacker can use automated commands (which could be stored on a forged technician card) to cause the BMD to

print ballots that do not reflect the voter's selection, alter the BMD's software or configuration, as well as edit or delete the BMD's audit log file. Trial Tr. Vol. 7B at 162:24-167:22, 197:17-198:12, 199:14-200:10 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 51-52. As described further below, Dr. Halderman demonstrated this vulnerability as part of demonstrating a hack using a forged technician card. *See* Section III.A.1.a.(2).(a) ¶ 108.

- j. **(10) Ineffective hash verification allows malware to hide (CVE-2022-1740):** A vulnerability in the design of Georgia's ICX BMDs (specifically its hash validation functions) allows malicious software to evade detection, appearing as if it were the genuine software. Trial Tr. Vol. 7B at 214:15-24 (Halderman); Curling Pl. Ex. 425 (Halderman Report) at 36-37.

106. Dr. Gilbert, Defendants' retained expert on election systems (but not computer security or cybersecurity, Trial Tr. Vol. 14A at 32:10-33:20), does not dispute the technical findings and vulnerabilities identified by Dr. Halderman. Dkt. 1815-8, Gilbert Dep. at 218:16-245:22.

107. To illustrate Vulnerabilities 1 and 2 ("Safe mode is accessible and allows installation of malware," and "terminal is accessible and allows installation

of malware”), Dr. Halderman demonstrated at trial that Georgia’s Dominion ICX BMDs can be hacked into in seconds by sticking a ballpoint pen in the back of the machine to depress the power button and reboot the BMD into safe mode, without breaking any of the machine’s tamper-evident seals. Trial Tr. Vol. 7B at 141:16-149:9 (Halderman).

- a. Once the ICX BMD is rebooted into safe mode, an attacker can, among other things: access a file manager program to edit or delete files on the machine; access and change operating settings using the settings application; remove or install software (including malware); and access the terminal emulator and enter the “su” command to obtain superuser access, which allows subsequent commands to bypass the operating system’s normal security controls. Trial Tr. Vol. 7B at 141:19-149:9 (Halderman).
- b. In short, simply by using a ballpoint pen to reboot the BMD into safe mode, an attacker can gain unrestricted access to the ballot data, election software, and operating system of the BMD, and can read, modify, or change any of the data or software at will. Trial Tr. Vol. 7B at 148:16-149:9 (Halderman).

108. To illustrate Vulnerability 5 (“Anyone can forge technician cards for all BMDs that allow installation of malware”), Dr. Halderman demonstrated how an attacker can use a counterfeit technician card as a “master key” to gain access to the same file manager, settings application, and terminal application as with the pen hack. Trial Tr. Vol. 7B at 160:10-162:6 (Halderman).

- a. Dr. Halderman demonstrated that, after performing the hack with the forged technician card, the BMD flipped his vote in an example presidential contest. Dr. Halderman demonstrated that he selected George Washington on the BMD, yet the human-readable text of the printout showed a vote for Benedict Arnold (and the QR code if scanned would also read as a vote for Benedict Arnold). Trial Tr. Vol. 7B at 169:14-170:13 (Halderman).
- b. If the ballot generated by the hacked BMD was audited, there would not be any signs to indicate that the ballot did not reflect Dr. Halderman’s selection on the screen, since the human-readable text and QR code both reflect a vote for Benedict Arnold. Trial Tr. Vol. 12 at 200:22-201:10, 211:20-212:7 (Adida).

109. Plaintiff Jeffrey Schoenberg, who has no computer science

background, was able to learn to implement the technician card hack within just a handful of tries before he completely mastered it. He has successfully implemented the hack on the BMD provided to Plaintiffs by Fulton County per the Court's order 10 to 15 times and was faster at completing the hack than at voting normally on the BMD. Trial Tr. Vol. 8A at 121:8-122:3 (Halderman).

110. To illustrate Vulnerabilities 6 and 7 ("Alt-Tab allows installation of malware" and "inadequate application signing allows installation and spreading of malware"), Dr. Halderman demonstrated in a one-take video how an attacker can use a commercially available USB device known as a "Bash Bunny" to install vote-flipping malware. Trial Tr. Vol. 7B at 173:17-174:18, 177:4-181:22, 184:7-187:25 (Halderman).

- a. A Bash Bunny device can be purchased online for around \$100. Trial Tr. Vol. 7B at 180:10-14 (Halderman).
- b. As demonstrated by Dr. Halderman, to employ the Bash Bunny device, an attacker only needs to unplug the USB cable from the printer connected to the BMD, and then plug that USB cable into the Bash Bunny device. The Bash Bunny device then automatically installs malware on the BMD in under two minutes. Trial Tr. Vol. 7B at 179:25-180:3 (Halderman).
- c. Malware installed on the BMD using the Bash Bunny device

can then change the QR codes that are printed by the BMD, thus altering the votes that are tabulated by the scanner, while leaving the human-readable text on the printout unchanged. In Dr. Halderman's demonstration, for instance, the malware changed the QR codes on three ballots (for an example contest about Sunday liquor sales) from "yes" votes to "no" votes, even though the human-readable text on the printouts continued to reflect "yes" votes. Trial Tr. Vol. 7B at 173:17-174:18, 177:4-181:22, 184:7-187:25 (Halderman). The malware Dr. Halderman demonstrated also left one initial vote unchanged, in order to evade detection during logic and accuracy testing. *Id.* at 201:1-16 (Halderman).

- d. Such malware could also be programmed to only change a fraction of the votes, such as 1 in 10 or 1 in 100. Trial Tr. Vol. 7B at 192:10-14 (Halderman).

111. Importantly, as the CISA Advisory confirms, malware installed on one ICX BMD can spread to other ICX BMDs via removable media (such as USB drives or voter cards) or via the EMS. Curling Pl. Ex. 89 at Sections 2.2.1, 2.2.5; Curling Pl. Ex. 425 (Halderman Report) at 49-53; Trial Tr. Vol. 7B at 201:21-207:14 (Halderman).

112. One component used in Georgia's BMD System are the KNOWiNK Poll Pads. These are used to check in in-person voters and create a voter access card that is inserted into a BMD to bring up a ballot on the screen. Trial Tr. Vol. 11 at 160:3-11 (Evans). The Poll Pads are connected to the internet. Trial Tr. Vol. 5A at 211:14-23 (Sterling). Misty Hampton even demonstrated to Mr. Chaney that one could use the Poll Pads to access Netflix. Dkt. 1815-10, Hampton Dep. at 49:22-50:11; Curling Pl. Ex. 110 at 19. That presents a serious risk to the security of the entirety of Georgia's BMD System because voters take the voter access card generated by the Poll Pads and plug them into BMDs to access ballots. Trial Tr. Vol. 11 at 160:3-11 (Evans).

113. As CISA and Dr. Halderman have described, one way malware can propagate across the system is via removable media, like voter access cards. *See* Section III.A.1.a.(2).(a) ¶ 111. Dr. Gilbert does not dispute this. *See* Section III.A.1.a.(2).(a) ¶ 106.

114. Forensic copies of election software and data obtained in the Coffee County breaches are currently in uncontrolled distribution on the internet; there is no way to determine how many people have access to those copies. *See* Section III.A.1.a.(2).(h). Defendants have testified that these copies included KNOWiNK's software used to operate the Poll Pads. Trial Tr. Vol. 11 at 275:24-276:8 (Evans).

(b) Findings of Fact: No One in the Secretary of State's Office Takes Responsibility for Cybersecurity

115. Michael Barnes, Director of the Center for Election Services (CES) and Deputy Director of Elections, testified that he has “no responsibility for cybersecurity.” Trial Tr. Vol. 12 at 76:23-25 (M. Barnes); *see also* Trial Tr. Vol. 3 at 159:16-160:5 (M. Barnes) (“somebody else” is “responsible for determining what security measures need to be taken to protect the election system,” while Michael Barnes is “kept out of it”).

116. Merritt Beaver, the former Chief Information Officer who held that role for nearly ten years until retiring at the end of 2023, stated unequivocally that he had no responsibility for the cybersecurity of Georgia’s BMD system, and that the Secretary of State has “outsourced” that responsibility entirely to Dominion. Trial Tr. Vol. 5A at 109:13-19, 128:9-14 (Beaver).

117. David Hamilton, former Chief Information Security Officer, stated that the security of Georgia’s voting equipment “fell outside the scope” of his work, and that “[a]ll of that was handled by the vendor Dominion.” Trial Tr. Vol. 11 at 125:2-13 (Hamilton).

118. Blake Evans, Director of Elections, testified that the Secretary of State’s Office makes its own decisions regarding election security and does not follow Dominion’s recommendations in every instance. Trial Tr. Vol. 13 at 99:13-

100:2 (Evans); *see also* Section III.A.1.a.(2).(e) ¶ 132.

119. Gabriel Sterling, Chief Operating Officer, stated that, as to responsibility for the security of the election system, “most of this lies in the county level.” Trial Tr. Vol. 5A at 217:24-218:7 (Sterling).

120. But James Barnes, former Coffee County Election Supervisor, testified that his county did not have any direct communications with Dominion; did not have a Dominion technician assigned to the county; and that the county would reach out to the State’s Center for Election Services, which is led by Michael Barnes, for any issue or problem with the election equipment. Dkt. 1815-2, J. Barnes Dep. at 78:7-15.

(c) Findings of Fact: The Defendants’ Logic and Accuracy Testing Is Inadequate to Mitigate the Identified Cybersecurity Vulnerabilities

121. The risk that the identified cybersecurity vulnerabilities, such as malware or mis-programming, will deprive voters of their right to have their vote counted is not mitigated by Georgia’s Logic and Accuracy testing.

122. Georgia law requires that, prior to every primary and election, the superintendent “shall have each electronic ballot marker tested to ascertain that it will correctly record the votes cast for all offices and on all questions and produce a ballot reflecting such choices” O.C.G.A. § 21-2-379.25(c); *see also* Dkt. 964 at 51-60. This requirement is generally referred to as “Logic and Accuracy”

testing.

123. CES Director Michael Barnes testified as to the Logic and Accuracy testing that his office trains county election officials to perform. Trial Tr. Vol. 3 at 136:24-137:8 (M. Barnes). That testing does not comply with the requirement that that each electronic market be tested to ascertain that it will correctly record the votes cast for all offices and all questions. Trial Tr. Vol. 9 at 38:15-21 (Skoglund).

124. There have been no material changes to the way Logic and Accuracy testing is conducted on BMDs in Georgia since the Court's 2020 Order addressing the issue. Trial Tr. Vol. 3 at 135:3-6, 142:4-7 (M. Barnes); Coalition Pl. Ex. 4 at 11-21 (SOS Logic and Accuracy Testing Procedures, Version 1.0).

125. Regulations of the SEB do not require that each BMD be tested to ascertain that it will correctly record the votes cast for all offices and all questions. Coalition Pl. Ex. 4 at 11-21; Dkt. 964 at 53-54. The SEB has not issued any new Logic and Accuracy rules or procedures to address the deficiencies identified by the Court in its October 11, 2020 Order. Trial Tr. Vol. 3 at 134:16-135:6 (M. Barnes).

126. Although Logic and Accuracy testing cannot address some forms of attacks on an election system, such as those demonstrated by Dr. Halderman, and can be evaded by malware, Trial Tr. Vol. 7B at 201:3-20 (Halderman), Logic and Accuracy testing can be "an important way of addressing other forms of attacks on

the system,” Trial Tr. Vol. 8A at 14:5-9 (Halderman). “However, the style of logic and accuracy testing performed in Georgia is unlikely to be effective even for that.” *Id.* at 14:9-11 (Halderman).

(d) Findings of Fact: Software Upgrades, Including the Potential 5.17 Update, Will Not Mitigate the Identified Cybersecurity Vulnerabilities

127. Based on the “large number, large variety, and the nature of the problems,” Georgia’s BMD System is very “brittle,” meaning that “a smaller error in the implementation would give an attacker a tremendous amount of access,” and there are numerous alternative ways for attackers to compromise the system. Trial Tr. Vol. 8A at 119:1-120:7 (Halderman). Because security was not a primary consideration in the design and engineering process that produced Georgia’s BMD System, it is “extremely hard then to retrofit security through simple changes or software patches.” *Id.* at 120:2-7, 12:15-13:9 (Halderman).

128. In addition, even in instances in which software updates can remediate certain vulnerabilities, such updates would have to be implemented constantly and promptly, since software rapidly becomes outdated in view of changes in technology and the ever-evolving threat landscape. Trial Tr. Vol. 5A at 69:21-70:22 (Beaver) (“IT is made up of many applications that change daily. That compatibility of applications changes every time something changes . . . Some things may not have been [a security] issue last year and are an issue this year.”);

Trial Tr. Vol. 11 at 133:23-134:3 (Hamilton) (the threat landscape changes “every day,” “[e]very hour”); Trial Tr. Vol. 8A at 136:18-137:7 (Halderman).

129. Defendants presented evidence that they would be *unable* to update to Democracy Suite 5.17 by the November 2024 election, demonstrating that they are unable to apply software updates in anything approaching a timely manner.

- a. There is no evidence that Georgia has made any software updates to address the vulnerabilities validated by CISA in June 2022, despite CISA’s recommendation that “as soon as possible,” jurisdictions take mitigation steps including to contact Dominion to “determine which software and/or firmware updates need to be applied.” Trial Tr. Vol. 8A at 23:12-25:2 (Halderman); Curling Pl. Ex. 89 at 3.
- b. Implementing a software update like Democracy Suite 5.17 to Georgia’s BMD System requires physically laying hands on every piece of election equipment in Georgia, including updating every BMD (taking around 20 minutes per device), scanner (20 minutes), EMS (4-5 hours), and replacing printers. Trial Tr. Vol. 12 at 54:11-56:22 (M. Barnes); Trial Tr. Vol. 11 at 79:18-80:7 (Evans).
- c. Georgia’s Elections Director Blake Evans testified that “there is

no time to be able to update” all necessary equipment to upgrade to Democracy Suite 5.17 even by the November 2024 election. Trial Tr. Vol. 11 at 77:8-16 (Evans); *see also id.* at 79:18-80:7 (Evans) (“that time is just not available”).

130. The Defendants do not contend (nor is there any evidence) that Democracy Suite 5.17, even if implemented, would mitigate the vulnerabilities with Georgia’s BMD System identified by Dr. Halderman and validated by CISA. Trial Tr. Vol. 8A at 11:11-16, 12:12-13:10, 28:13-25 (Halderman); *see* Section III.A.1.a.(4). And the evidence Defendants did present about Democracy Suite 5.17 suggests it has significant failings:

- a. Democracy Suite 5.17 was certified by the Election Assistance Commission (EAC) under an older standard, VVSG 1.0, that was established in 2005 and is no longer used by the EAC. Trial Tr. Vol. 11 at 207:11-16 (Evans).
- b. According to Gabriel Sterling, in limited pilot testing conducted in November 2023 on a “small number of elections,” Democracy Suite 5.17 showed “issues [the Defendants] have not been able to explain through engineering,” including that the “EMS went out” and in three of the five counties tested, the “ICCs didn’t function properly.” Trial Tr. Vol. 5A at 219:19-

24 (Sterling).

(e) Findings of Fact: The Secretary of State's Office Makes Decisions Affecting Cybersecurity While Disregarding Advice of Computer Science Professionals

131. While several of Defendants' witnesses testified that the Defendants rely on Dominion for security of the voting system, *see supra* at Section III.A.1.a.(2).(b) ¶¶ 116-17, Blake Evans, Director of Elections, testified that the Secretary of State's Office at times disagrees with Dominion's recommendation as to security measures and makes its own decisions. Trial Tr. Vol. 13 at 99:7-23 (Evans). For example, the Secretary's Office uses unified security keys in Georgia's elections, despite Dominion recommending against it. Trial Tr. Vol. 11 at 214:2-15 (Evans).

132. Nobody with cybersecurity training is involved in making such decisions to disregard Dominion's security recommendations. Trial Tr. Vol. 13 at 99:24-100:7 (Evans).

133. From 2017 to 2021, the Secretary of State also repeatedly failed to implement recommendations made by its then-cybersecurity vendor, Fortalice:

- a. In October 2017, Fortalice identified 22 cybersecurity risks, including 7 "significant" risks, with the Secretary of State's IT infrastructure. Curling Pl. Ex. 18; Trial Tr. Vol. 5A at 62:6-8, 64:23-65:1 (Beaver). The October 2017 report included risks

pertaining to access to the voter registration system. Trial Tr. Vol. 5A at 63:25-64:5 (Beaver).

- b. In February 2018, Fortalice identified 15 cybersecurity risks with the Secretary of State's IT infrastructure. Curling Pl. Ex. 17; Trial Tr. Vol. 5A at 66:7-9 (Beaver). This report, like the October 2017 report, also documented risks concerning access to the voter registration system. Trial Tr. Vol. 5A at 67:6-9 (Beaver).
- c. In November 2018, Fortalice made 20 additional cybersecurity recommendations related to the Secretary of State's IT infrastructure. Curling Pl. Ex. 95; Trial Tr. Vol. 5A at 69:14-16 (Beaver). The November 2018 report also found that only 3 of the top 10 risks identified a year earlier had been remediated. Trial Tr. Vol. 5A at 71:12-16 (Beaver). Rather than remediate the previously-identified problems with access to the voter registration system, then-CIO Merritt Beaver directed Fortalice not to examine that issue in November 2018. Trial Tr. Vol. 5A at 71:17-20, 73:2-17 (Beaver).
- d. Fortalice conducted a preliminary assessment of Georgia's ICX BMDs in August 2019 "to do a security assessment of the

BMDs.” Trial Tr. Vol. 4 at 84:16-20 (Germany); Trial Tr. Vol. 5A at 73:18-74:5 (Beaver). This assessment was done under the Secretary of State’s Office’s standard contract with Fortalice. Trial Tr. Vol. 5A at 74:6-75:10 (Beaver). A key aspect of this assessment was to report on an attempted hack of the BMDs. Trial Tr. Vol. 5A at 77:14-78:3 (Beaver). The Defendants withheld the report as privileged. Trial Tr. Vol. 5A at 79:23-81:9 (Beaver).

- e. By August 2020, 11 of the 20 recommendations made by Fortalice in November 2018 had still not been fully implemented. Dkt. 1815-9, Hamilton Dep. at 58:17-59:19.
- f. After the Court issued its August 2019 preliminary injunction order enjoining the use of DREs, in which the Court examined and discussed several Fortalice reports, then-CIO Merritt Beaver directed Fortalice to stop providing written reports altogether, purportedly because the reports were “taken out of context by the public.” Trial Tr. Vol. 5A at 84:6-11, 84:24-85:20 (Beaver).
- g. Despite the numerous cybersecurity risks identified by Fortalice in 2018 and 2019, then-CIO Merritt Beaver claimed that in

2020 and 2021—when Fortalice was no longer providing written reports—“nothing” was raised to him coming out of Fortalice’s assessments. Trial Tr. Vol. 5A at 87:10-21 (Beaver). Yet Fortalice draft reports from 2020 demonstrate that Fortalice was actually continuing to identify numerous additional vulnerabilities and make further recommendations. Curling Pl. Exs. 19, 97, 98, 292, 293.

134. Sometime after 2020, Fortalice decided to stop working with the Georgia Secretary of State’s Office. Trial Tr. Vol. 5A at 102:2-8 (Beaver).

135. David Hamilton worked only part-time as CISO during his time working for the Secretary’s Office, even though he recommended that the Secretary’s Office hire a full-time CISO. Trial Tr. Vol. 11 at 121:23-122:20 (Hamilton).

136. Merritt Beaver also worked only part-time (“fractional”) as CIO since November 2019, working part-time for the Insurance Commission. Trial Tr. Vol. 5A at 102:24-103:15 (Beaver).

137. David Hamilton advised the Secretary’s Office that their practice of mailing commodity USB drives with crucial election data to counties via FedEx was not best practice, and recommended switching to a managed, encrypted USB drive solution. But by the time Mr. Hamilton departed his role, the Secretary’s

Office had not implemented that recommendation. Trial Tr. Vol. 11 at 135:9-136:6, 137:16-24 (Hamilton).

138. Dr. Wenke Lee was the only cybersecurity expert who served on the SAFE Commission, which was set up by the Secretary of State's Office to help determine Georgia's next voting system after the DREs were replaced. Trial Tr. Vol. 5A at 156:9-15 (Sterling).

139. The Secretary of State's Office was aware of Dr. Lee's vocal opposition to Georgia selecting BMDs as its new voting system. Trial Tr. Vol. 5A at 156:18-21 (Sterling).

140. Dr. Michael Shamos, a former expert retained by the Defendants, testified that he is "not a fan of bar codes" in the context of a voting system. Dkt. 1815-15, Shamos Dep. at 56:13-25.

141. The Defendants' own retained expert, Dr. Juan Gilbert, recommends against using QR codes in a voting system. Dkt. 1815-8, Gilbert Dep. at 89:9-16.

142. The Secretary of State's Office repeatedly dismissed and disparaged Dr. Halderman's July 21, 2021 report despite the fact that no one in the office with computer science training had reviewed the report.

- a. Gabriel Sterling publicly dismissed Dr. Halderman's report, calling it a "load of crap," without having read it. Dkt. 1815-16, SOS 30b6 (Sterling) Dep. at 58:9-19.

- b. On January 26, 2022, Georgia Governor Brian Kemp asked Secretary Raffensperger to immediately gather all relevant information regarding Dr. Halderman's report, and to thoroughly vet Dr. Halderman's findings. Trial Tr. Vol. 16B at 167:10-168:7 (Sterling).
- c. On January 27, 2022, Secretary Raffensperger called for the public release of Dr. Halderman's report. Curling Pl. Ex. 85. At that time, the only person in the office who had actually read the report was then-General Counsel Ryan Germany, who has no computer science training. Trial Tr. Vol. 4 at 127:5-22 (Germany); Trial Tr. Vol. 5A at 49:18-50:15 (Beaver) (Merritt Beaver had not heard of nor read Dr. Halderman's report as of February 2022).
- d. Mr. Germany indicated that the Secretary's decision to call for the public release of Dr. Halderman's report was motivated not by any security concerns, but instead by frustration with press and media coverage. Trial Tr. Vol. 4 at 119:3-14 (Germany).
- e. Merritt Beaver, then-CIO, stated that from a cybersecurity perspective, he considered the public release of Dr. Halderman's report a "bad practice" and "ignorant of

cybersecurity.” Dkt. 1815-4, SOS 30b6 (Beaver) Dep. at 379:3-15.

- f. On February 10, 2022, Secretary of State Brad Raffensperger dismissed Dr. Halderman’s report, remarking that Dr. Halderman’s findings were “not real world,” without having read the report. Curling Pl. Ex. 491 at 42:35-45:32; Trial Tr. Vol. 4 at 125:25-126:25 (Germany).

(f) Findings of Fact: The Defendants Lack Procedures to Maintain Chain of Custody for Critical Election Equipment

143. In 2021, when the Defendants removed the EMS and ICC from Coffee County, they did not have chain of custody paperwork, so there was no documentation of the replacement of the EMS and ICC. Trial Tr. Vol. 3 at 144:10-13 (M. Barnes); Dkt. 1606, J. Barnes Dep. at 132:8-16.¹⁴

144. Despite not maintaining chain of custody and not having paperwork in place to track chain of custody, technicians for the Center of Election Services “as a matter of course” regularly drove around the state with spare EMS servers. Trial Tr. Vol. 4 at 28:8-29:2 (Germany); Trial Tr. Vol. 16B at 56:13-57:19 (Sterling).

¹⁴ Defendants’ closing argument demonstratives included a reference to a collection of election forms in the Poll Worker Manual. Dkt. 1820-2 at 86 (citing Defs. Ex. 1242). However, Defendants have not pointed to any evidence indicating that county workers fill out these forms as instructed.

(g) Findings of Fact: The Defendants Provide Minimal Training on Election Security that Fails to Protect Against Known Security Vulnerabilities

145. Although the Secretary of State provides a 104-page manual for poll workers, it was last updated in May 2021. Defs. Ex. 1242. It does not provide any information or guidance with respect to the security vulnerabilities identified by Dr. Halderman and validated by CISA, nor any training with respect to the Coffee County breach or other attempts to gain unauthorized access to election equipment. *See id.*

146. The evidence illustrates that whatever training resources the Secretary of State provides to counties so that they can in turn train election workers is wholly inadequate:

- a. Misty Hampton, the then-Coffee County Elections Director, kept passwords for election equipment on post-it notes taped to her computer, which would be visible at all times to anyone who could see her desk and the EMS itself. Curling Pl. Ex. 37; Trial Tr. Vol. 6A 194:14-195:12.
- b. In the November 2020 general election, the Secretary of State's Office received a report from an election official in Fulton County indicating that proper election procedures had not been followed. Curling Pl. Ex. 100. The report suggested that when

workers opened the cabinets containing the voting machines, election database doors were wide open and unsecured by a zip tie with serial numbers. *Id.* Despite this, the machines were used in the election. *Id.* The election official also reported finding two paper ballots on a printer and that one machine showed a ballot had been cast before opening. *Id.* Finally, the official reported that workers did not compare the serial numbers on zip ties on the machines with those on the form, as they were instructed to do in training. *Id.* The official reported that their manager said they did not need to because they have “never seen them not match.” *Id.*

- c. Michael Barnes repeatedly instructed county officials to replace missing or broken security seals. In July 2020, Clinch County’s Elections Supervisor reported to Michael Barnes that during Logic & Accuracy testing, they discovered BMDs that were missing the required seals. Michael Barnes responded, “just please put your own seal on the equipment.” Curling Pl. Ex. 104; *see also* Trial Tr. Vol. 5A at 175:13-14 (Sterling). Similar reports of missing seals were made in Hart County, *see* Curling Pl. Ex. 102, and Jefferson County, *see* Curling Pl. Ex. 103.

- d. When James Barnes became the Coffee County Election Supervisor in April 2021, only three months after the Coffee County breaches occurred, he found a box of 30-40 flash drives in the Coffee County Elections Office, assumed they were from the Secretary of State's Office, and used those for the next elections. Dkt. 1815-2, J. Barnes Dep. at 194:10-195:24.
- e. In August 2021, James Barnes also sent Mr. Blanchard a memorandum reporting that election materials which should have been turned over were "stored in a room with a leaking roof . . . and no environmental controls;" "ICPs were stored in a room with an unlocked door to the outside of the building"; "faces of units [of equipment] were detached;" "memory cards from the previous voting equipment had not been turned over to CES;" and "cast ballots from multiple elections were mixed together in stacks" and "absentee by mail envelopes from multiple elections were similarly strewn about the office in scattered piles." Coalition Pl. Ex. 45 at 2.
- f. Despite the Defendants' efforts to train county election officials, officials in at least Coffee County, Butts County, and Spalding County attempted to allow an outside forensic firm

access to image election equipment and ballots. In the case of Coffee County, those officials succeeded. *See* Section III.A.1.a.(2).(h), Section II.A.2.b ¶ 73, Section III.A.3 ¶ 158.

- g. Chris Harvey, Georgia's former Elections Director, testified that given varying levels of experience, interest, and knowledge among county officials about cybersecurity and physical security, "any one of Georgia's 159 counties could be a weak point." Trial Tr. Vol. 2 at 285:22-286:7 (Harvey).

147. Election officials are trained to set up polling places such that workers cannot view what a voter is doing on a machine, despite the anti-tampering statutory requirement that machines must be visible to the public during voting. O.C.G.A. § 21-2-267(a). Counties are instructed to position the BMDs to face walls and surround them with privacy screens to help ensure that voters cannot have their voting screens seen. Trial Tr. Vol. 13 at 178:5-179:22 (Kirk); Coalition Pl. Ex. 66. As a result, poll workers could not observe if a voter was attempting to execute one of the attacks demonstrated by Dr. Halderman, including for example by using a ballpoint pen to gain superuser access to the machine, or a Bash Bunny device to install vote-flipping malware.

(h) Findings of Fact: Physical Security Measures Are Inadequate to Mitigate Cybersecurity Vulnerabilities, as Exemplified by the Coffee County Breaches

148. In January 2021, there were multiple breaches of the Coffee County Elections Office in which various unauthorized individuals gained far-reaching access to election equipment.

- a. On January 7, 2021, four employees of the Atlanta-based forensics firm, SullivanStrickler, traveled to the Coffee County Elections Office and used forensic tools and techniques to copy election software, data, and equipment over a seven-hour period. Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 9.b, 24.
- b. The four SullivanStrickler employees who participated were Paul Maggio, Jennifer Jackson, Karuna Naik, and Jim Nelson. Trial Tr. Vol. 6A at 132:3-7 (Maggio).
- c. SullivanStrickler was retained by Sidney Powell to conduct a forensic collection of all available voting equipment in Coffee County. Trial Tr. Vol. 6A at 105:16-22, 116:21-117:10, 119:5-6, 130:14-20 (Maggio); Curling Pl. Ex. 349.
- d. SullivanStrickler's work was directed by then-Coffee County Elections Director Misty Hampton, then-Coffee County

Republican Party Chair Cathy Latham, and bail bondsman, Scott Hall. Trial Tr. Vol. 6A at 105:16-22, 113:13-23, 135:22-136:11, 136:17-22 (Maggio).

- e. During their seven hours in the Coffee County Elections Office, SullivanStrickler was able to make forensic copies of: (1) the EMS, including all election data present on the EMS as of that date; (2) the ICC, including the Dominion ICC software; (3) 18 CompactFlash cards used with the scanners, containing election data; (4) 7 USB drives, including the ICX application installation files for Georgia's BMDs; (5) a Mobile Ballot Printing laptop, including the Dominion mobile ballot production software; and (6) partial data from 20 PollPad devices. Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 40-54; Curling Pl. Ex. 166.
- f. In the course of their time in the Coffee County Election Office, SullivanStrickler entered, among other things, the EMS room. Trial Tr. Vol. 6A at 186:1-13 (Maggio); Ga. Comp. R. & Regs. 183-1-12-.05(3), (5).
- g. On January 7, 2021, 2:43pm ET, Misty Hampton cut the security seals that are meant to secure PollPad devices in order

to allow SullivanStrickler access to the PollPads. Trial Tr. Vol. 6A at 186:1-13 (Maggio); Curling Pl. Ex. 493 at 0:17-0:20 (surveillance video).

- h. After collecting the aforementioned software and data, SullivanStrickler uploaded all of it to a ShareFile site, an internet-based file storage and sharing site. Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 56-57; Trial Tr. Vol. 6A at 196:11-197:11 (Maggio); Curling Pl. Ex. 115.
- i. Doug Logan of Cyber Ninjas downloaded the forensic images of the Coffee County EMS and ICC, converted them into “virtual machines,” and uploaded those back to the ShareFile site.” Dkt. 1815-13, Logan Dep. at 124:24-126:5.
- j. “[A] virtual machine allows you to . . . boot up the device and . . . utilize it like it was the [original] computer.” Dkt. 1815-13, Logan Dep. at 124:24-126:5. It “becomes sort of like a little laboratory,” allowing one to experiment with the features of the software and conduct “investigations on how to overcome defenses.” Trial Tr. Vol. 9 at 24:19-26:9 (Skoglund).
- k. An activity log of the ShareFile site shows that individuals accessed the Coffee County data from IP addresses assigned to

locations around the country and internationally, including: San Francisco, California; Glendale, California; Torrance, California; Kansas; Plantation, Florida; London, England; and Florence, Italy. Curling Pl. Ex. 115; Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 57-68.

- l. In addition, a copy of the Coffee County data was mailed on a drive to Stefanie Lambert in Royal Oak, Michigan. Trial Tr. Vol. 6A at 203:14-25; Curling Pl. Ex. 162; Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 76-83.
- m. Ben Cotton, located in Montana, also obtained a copy of the Coffee County data via the ShareFile site, and saved it to his home computer in Montana where it continued to reside as of August 2022. Dkt. 1815-6, Cotton Dep. at 127:20-128:10; Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 84-88.
- n. On January 18, 2021, five individuals—Jeffrey Lenberg, Doug Logan (of Cyber Ninjas), Misty Hampton, Ms. Hampton’s daughter, and Jil Ridlehoover—were present in the Coffee County Elections Office for a four-hour period. Dkt. 1815-14, Lenberg Dep. at 88:15-89:11, 109:13-110:1; Curling Pl. Ex. 471 (Skoglund Decl.) ¶ 94.

- o. The same group returned to the Coffee County Elections Office on January 19, 2021, for approximately nine hours. Curling Pl. Ex. 471 (Skoglund Decl.) ¶ 96.
- p. Over the course of January 18 and 19, 2021, Ms. Hampton operated election equipment, including the ICC, at the direction of Messrs. Lenberg and Logan, who wanted to run various “experiments” on the live election equipment. Dkt. 1815-14, Lenberg Dep. at 94:15-95:13; Dkt. 1815-13, Logan Dep. at 51:11-17, 51:21-52:17; Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 95-96.
- q. Messrs. Logan and Lenberg directed Ms. Hampton to change dates and settings on the ICC, and they did not change the date and settings back, which would have impacted a future election if the ICC had not later been replaced. Dkt. 1815-14, Lenberg Dep. at 116:16-117:2, 121:1-21, 179:16-180:2; Trial Tr. Vol. 9 at 28:4-30:13 (Skoglund); Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 105-107.
- r. Messrs. Logan and Lenberg also directed Ms. Hampton to scan thousands of ballots as part of their experiments. Curling Pl. Ex. 471 (Skoglund Decl.) ¶ 108; Dkt. 1815-13, Logan Dep. at

51:11-17, 51:21-52:17.

- s. From January 25 to 29, 2021, Mr. Lenberg returned to the Coffee County Elections Office, working with Ms. Hampton and her daughter over this time period to access an ICP scanner, blank ballots, a BMD, a BMD Printer, and a PollPad. Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 118, 127-130; Dkt. 1815-14, Lenberg Dep. at 109:13-110:1.
- t. During this time period, election event software was also used to program memory cards and USB drives, and more than 500 ballots were scanned. Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 120, 122.
- u. Mr. Lenberg also obtained a thumb drive from Ms. Hampton containing data from the 2021 run-off election. Curling Pl. Ex. 471 (Skoglund Decl.) ¶¶ 129-130.

(i) Findings of Fact: The Coffee County Breach Resulted in an Uncontrolled Distribution of Georgia’s Election Software and Data, Which Significantly Increases the Risk of a Future Attack

149. The Coffee County breaches collectively were “the largest election security breach in United States history.” Trial Tr. Vol. 9 at 31:8-32:10 (Skoglund).

150. The dissemination of Coffee County data (including virtual machines of the EMS and ICC) described above has placed that data in “uncontrolled distribution:” there is no way to know how many people have access to the data, nor any way to retrieve the data or undo its spread. This uncontrolled distribution gives access to threat actors (who would otherwise not have sufficient resources and expertise) to “work on crafting exploits or ways to lower defenses” of Georgia’s BMD system. Trial Tr. Vol. 9 at 32:11-33:3 (Skoglund).

151. With the data taken from Coffee County and distributed to an unknown number of unauthorized recipients, an attacker could test potential attacks (such as modified applications) without needing physical access to a BMD. Trial Tr. Vol. 8A at 67:9-14 (Halderman). Attackers could use the Coffee County data to study the software at their leisure, to discover vulnerabilities including the ones identified by Dr. Halderman as well as additional ones he missed, and then to develop and test ways of exploiting those vulnerabilities, including malware, technician card attacks, and more. Trial Tr. Vol. 8A at 120:10-121:6 (Halderman).

152. The Coffee County breaches “materially” increased the risk to future elections using Georgia’s BMD System. *Id.*

153. In addition, at a symposium held by Mike Lindell in summer of 2021, a version of the Dominion EMS software taken from Colorado was made publicly available, as well as the EMS software and other data software taken from Antrim

County, Michigan. These versions are the same or very similar to the software and configuration used in Georgia. Trial Tr. Vol. 8A at 137:8-23, 138:11-20 (Halderman); Defs. Ex. 1225.

154. The Antrim software was passed to participants privately, but there were at least hundreds of people present at the event, so it is likely that it is in further distribution today. Trial Tr. Vol. 8A at 137:24-138:7 (Halderman).

155. Merritt Beaver, former CIO of the Secretary of State's Office, stated that "anytime you reveal any security information about an organization, you give a road map to bad actors." Dkt. 1815-3, SOS 30b6 (Beaver) Dep. at 192:16-193:6. According to him, the best defense of any system is keeping everything secret about that system. Dkt. 1815-4, SOS 30b6 (Beaver) Dep. at 417:6-15.

156. According to Ryan Germany, then-General Counsel of the Secretary's Office, unauthorized access to election equipment is a "huge security breach." Curling Pl. Ex. 632.

157. Russell David Willard, an attorney representing the Defendants in opposing efforts to obtain access to election equipment, argued in 2020 that "[i]t poses a security risk for Ms. Powell's minions to go in and image everything, download the software, and figure out for future elections a way to hack in . . . [Y]ou cannot allow...a third party to come in and get the proverbial keys to the software kingdom." Coalition Pl. Ex. 12. That is precisely what happened.

(3) Findings of Fact: The Defendants' Response to the Coffee County Breaches Was Slow and Ineffective

158. On August 2, 2022, Ryan Germany swore to this Court that the Secretary of State's Office had no knowledge of the Coffee County breaches before March 2022. Trial Tr. Vol. 3 at 252:2-3 (Germany); Dkt.1444-1 ¶¶ 19, 21. The Defendants could and should have discovered the Coffee County breaches long before that:

- a. In November of 2020, then-Coffee County elections director Misty Hampton¹⁵ created a YouTube video about manipulation of Dominion software. A password for the Coffee County ICC unit was clearly visible in the video. Curling Pl. Ex. 495; Trial Tr. Vol. 9 at 53:15-19 (Skoglund).
- b. The Secretary of State's office opened an investigation into Coffee County in December 2020. The investigation centered on Coffee County's initial refusal to certify the results of the 2020 Presidential election and the claims made in Ms. Hampton's YouTube video. Curling Pl. Ex. 493; Curling Pl. Ex. 522 at 1.

¹⁵ Ms. Hampton previously was known by the name Misty Hayes. Trial Tr. Vol 2 at 286:21-287:10 (Harvey); Curling Pl. Ex. 78.

- c. On December 22, 2020, the Secretary of State's Office was alerted to an attempted forensic imaging of election equipment in Butts County by an outside party. Ryan Germany replied that any such imaging "would be against the law" and "would be a huge security breach." Curling Pl. Ex. 632 at 1.
- d. In early 2021, Joseph Kirk, Bartow County's Election Supervisor, notified the Secretary of State's Office that a third party had requested to image election equipment in Bartow County. Trial Tr. Vol. 13 at 183:19-184:13 (Kirk).
- e. On January 2, 2021, Donald Trump asked Secretary of State Raffensperger to "find" votes suggesting the 2020 November General Election was wrongly decided. Trial Tr. Vol. 12 at 90:10-14 (M. Barnes).
- f. On January 26, 2021, 8:08 am ET, Secretary of State investigator Josh Blanchard encountered Jeffrey Lenberg in the Coffee County elections office. Surveillance video shows Mr. Lenberg entering what witnesses identified as Misty Hampton's office, which was connected to the EMS server room. Curling Pl. Ex. 493; Trial Tr. Vol. 6A at 143:1-16 (Maggio).
- g. On February 1, 2021, Mr. Sinners began working for the

Secretary of State as communications director. Trial Tr. Vol. 3 at 22:7-21, 50:8-10 (Sinners). He was hired as a “Trump whisperer.” *Id.* at 51:7-13. At the time he was hired, he may have had knowledge of the security breaches in Coffee County:

- i. On November 10, 2020, Robert Sinners, then a staffer for the Trump campaign in Georgia, sent an open records request regarding the vote review panels for the 2020 November General Election to all 159 counties. Defs. Exs. 272, 276; Trial Tr. Vol. 3 at 24:23-25:4 (Sinners). Mr. Sinners made the open records request in response to receiving a tip from Ms. Hampton about a board of elections meeting in which there was a conversation about a problem with the voting systems that might be of interest to the Trump campaign. Trial Tr. Vol. 3 at 30:21-31:11 (Sinners).
- ii. Mr. Sinners also had conversations with Eric Chaney about issues with voting equipment around the same time. *Id.* at 34:24-36:18.
- iii. One month later, on December 12, 2020, Mr. Sinners travelled to Coffee County with the Deputy General

Counsel for the Georgia Republican Party to collect statements and affidavits in support of a lawsuit attempting to decertify the results of the 2020 November General Election. *Id.* at 38:21-39:3; 41:1-43:10; Defs. Ex. 297 at 52-54.

- iv. On January 7, 2021, the same day SullivanStrickler imaged election equipment in Coffee County, Eric Chaney texted Mr. Sinners' phone number to Misty Hampton and asked to switch to Signal. Curling Pl. Ex. 110 at 23; Dkt. 1815-5, Chaney Dep. at 127:10-128:7; Trial Tr. Vol. 3 at 53:10-11 (Sinners).
- h. In April 2021, then-Coffee County Elections Director James Barnes contacted the Center for Election Services, led by Michael Barnes, to report that he could not access the Coffee County EMS server. Dkt. 1815-2, J. Barnes Dep. at 106:13-22.
- i. On May 6, 2021, Dominion sent a notice to counties in Georgia warning about firms seeking to conduct "forensic audits" of their voting equipment and instructing counties to only allow authorized, legal users access to voting equipment. Curling Pl. Ex. 143.

- j. On the same day, May 6, 2021, James Barnes reported to then-Elections Director Chris Harvey that he had found a Cyber Ninjas business card on Misty Hampton's desk. Curling Pl. Ex. 78 at 3. James Barnes reported finding the business card "alarming" in light of the Dominion notice. *Id.* He noted: "If [Ms. Hampton] did not use [Cyber Ninjas], she was at the very least in contact." *Id.*

159. The Defendants failed to properly respond to allegations about the security breaches in Coffee County.

- a. On May 11, 2021, Mr. Harvey responded to Mr. James Barnes' email noting that "it might be prudent to see if there has been any contact between the person on the card and anyone in your office and/or if they have had any access to any of your equipment." He copied Frances Watson, Chief of the Secretary of State's Office's Investigations Division, and Michael Barnes from CES. Curling Pl. Ex. 78 at 1.
- b. Mr. Harvey's "worst fear" was that a third party had access to sensitive election equipment. Trial Tr. Vol. 3 at 172:15-173:22 (Harvey).
- c. In response to Mr. Harvey's email, Ms. Watson believed that

she and Michael Barnes were proceeding on “simultaneous track[s],” with her team checking to see if Cyber Ninjas had contact with Coffee County officials and Michael Barnes’ team evaluating if there was unauthorized access to the server, although Ms. Watson and Mr. Michael Barnes did not coordinate about the investigation. Trial Tr. Vol. 7B at 52:8-53:10 (Watson).

- d. On May 11, 2021, Investigator Joshua Blanchard reported to his supervisor, Pamela Jones, that he spoke with James Barnes, who told him there was no evidence of contact from Cyber Ninjas. Curling Pl. Ex. 145 at 1. Ms. Jones passed that information on to Ms. Watson, who responded, “Thanks.” *Id.*
- e. Ms. Watson did not recall any follow up interaction she had with Mr. Blanchard or Ms. Jones after her email saying “thanks.” Trial Tr. Vol. 7B at 52:4-7 (Watson). Ms. Watson found it “surprising” that there was not a completion of the investigation. *Id.* at 57:10-17.
- f. James Barnes testified that no one from the Secretary of State’s Office ever followed up with him after he sent the email alerting the Secretary of State’s Office to his suspicion that Ms.

Hampton had been in touch with Cyber Ninjas. Dkt. 1815-2, J. Barnes Dep. at 163:22-164:23.

- g. On June 8, 2021, CES replaced the EMS and ICC servers in Coffee County. Trial Tr. Vol. 12 at 117:10-15 (M. Barnes).
- h. The EMS and ICC each have their own passwords. Dkt. 1808-1, J. Barnes Dep. at 147:1-7.
- i. At the time the equipment was picked up on June 8, the ICC password was functional; the EMS password was not. *Id.* at 147:9-13. Nevertheless, CES replaced the ICC because they were concerned about its potential “compromise.” *Id.* at 147:14-148:21.
- j. Upon bringing both the EMS and ICC back to Atlanta, CES could not gain access to either because “[t]he passwords that [they] had were unable to get into the computer.” Trial Tr. Vol. 12 at 112:17-22 (M. Barnes).
- k. The investigation ended there. *Id.* CES did not test either computer for malware. *Id.* They did not ask Fortalice or Dominion for help accessing the computers. *Id.* at 116:7-17. They put the machines “in a closet” and took no further steps to investigate if either had been compromised. *Id.* at 117:10-15.

- l. On July 16, 2021, Curling Plaintiffs served their second set of interrogatories on the Defendants. In Interrogatory No. 15, Curling Plaintiffs asked Defendants to “describe with specificity each known, attempted, or suspected Security Vulnerability or Security Breach involving any part of Georgia’s Current Election System.” Curling Pl. Ex. 579 at 9.
- m. Defendants replied to Curling Plaintiffs’ second set of interrogatories on August 24, 2021. In response to Interrogatory No. 15, Defendants failed to cite Coffee County, or any of the other counties that had experienced attempted access by third parties. Curling Pl. Ex. 580 at 5.
- n. On August 24, 2021, James Barnes sent Mr. Blanchard a memorandum regarding issues James Barnes had seen at the Coffee County elections office. In this memorandum, James Barnes stated that election materials that should have been turned over were “stored in a room with a leaking roof . . . and no environmental controls.” Coalition Pl. Ex. 45 at 2. James Barnes further stated that “ICPs were stored in a room with an unlocked door to the outside of the building,” “faces of units [of equipment] were detached,” and “memory cards from the

previous voting equipment had not been turned over to CES.”

Id. Lastly, James Barnes noted that “cast ballots from multiple elections were mixed together in stacks” and “absentee by mail envelopes from multiple elections were similarly strewn about the office in scattered piles.” *Id.*

- o. On September 28, 2021, Mr. Blanchard submitted an investigation report for SEB Case No. SEB2020-250, regarding Coffee County’s failure to certify results from the November 2020 General Election, Misty Hampton’s YouTube video discussing ways in which election software could be manipulated, and issues pertaining to voters receiving absentee ballots. Curling Pl. Ex. 40. This report contained no reference to or evaluation of potential unauthorized access of election equipment in Coffee County, Mr. Blanchard’s encounter with Mr. Lenberg on January 26, 2021, James Barnes’ email regarding the Cyber Ninjas business card, or any of the issues flagged in James Barnes’ August 24 memorandum. *Id.*
- p. Curling Plaintiffs sent revised interrogatories to Defendants on October 19, 2021. Interrogatory No. 15 asked the Defendants to “describe with specificity each successful or attempted

instance of *unauthorized access* to or copying or alteration of data on any of the following specific equipment used in any election in Georgia”: BMDs, associated printers, scanners, EMS servers, and related equipment. Curling Pl. Ex. 581 at 1.

- q. Defendants responded to Curling Plaintiffs’ revised interrogatories on October 21, 2021. In response to Interrogatory No. 15, Defendants stated that “they do not have knowledge of any election equipment used with the Dominion system *being hacked* in an election in Georgia.” Defendants’ response, which omitted any mention of Coffee County or other related counties, failed to explain the difference between an election system *being hacked* and *unauthorized access*.

Curling Pl. Ex. 582 at 1-2.

- r. Mr. Blanchard testified that he first heard about the unauthorized access in Coffee County in April of 2022, when an investigation was opened with the Investigations Division. Trial Tr. 6A at 232:12-19 (Blanchard).
- s. In April 2022, Mr. Blanchard was assigned to the investigation regarding the Coffee County breaches by his direct supervisor, Glenn Archie. But Mr. Blanchard was instructed by Mr. Archie

to “hold off moving forward with an investigation.” Trial Tr. 6A at 233:22-234:16 (Blanchard).

- t. Mr. Blanchard understood that Mr. Archie’s instruction to “hold off” came after Mr. Archie had spoken with the Chief of the Investigations Division, Sara Koth. Trial Tr. 6A at 234:17-25 (Blanchard).
- u. Mr. Blanchard “never” actively investigated the Coffee County breaches and is not aware of anybody in his office doing so. Trial Tr. Vol. 6A at 261:2-15 (Blanchard).
- v. On April 25, 2022, the Secretary of State’s Office received an open records request for “any documents related to an investigation into the handling of the EMS server in Coffee County that **was opened** between February 24, 2022, and the present.” Curling Pl. Ex. 138 at 4 (emphasis original).
- w. Ryan Germany instructed employees in the Secretary of State’s Office to “reopen” SEB2020-250—the original investigation regarding Coffee County’s failure to certify results from the November 2020 General Election and Misty Hampton’s YouTube video, for which Mr. Blanchard had submitted a report on September 28, 2021. *Id.* at 1; Trial Tr. Vol. 3 at

269:1-271:8 (Germany). Mr. Germany instructed employees to note that the investigation “was re-opened to deal with new allegations regarding the same event.” Curling Pl. Ex. 138 at 1.

- x. Four days later, on April 29, 2022, Gabriel Sterling, speaking at an elections panel, stated that the Coffee County breach “did not happen.” Curling Pl. Ex. 494.
- y. Chain of custody logs from July 1, 2022 show that James Persinger, Defendants’ litigation consulting expert, took possession of Coffee County’s EMS and ICC from Michael Barnes—over a year after Michael Barnes collected the server from the county. Curling Pl. Ex. 471 ¶ 102. Mr. Persinger made a forensic image of the EMS but did so in a way that modified the original computer, in part by resetting the primary user’s password. *Id.* ¶ 103. These actions modified evidence that would allow independent verification that his copy was an accurate copy of the original. *Id.*
- z. Mr. Germany testified that Mr. Persinger was hired in May 2021 to examine a server that had been taken from KSU, not Coffee County. Trial Tr. Vol. 10A at 152:13-153:14 (Germany).

- aa. The chair of the Coffee County election board, Wendell Stone, testified that he became aware of the Coffee County breach through press reports shortly before Mr. Stone's deposition in September 2022, not from the Secretary of State's Office. Dkt. 1815-18, Coffee Cnty. BOE 30b6 (Stone) Dep. at 26:12-19.
- bb. In late September 2022, well over a year after CES replaced the EMS and ICC in Coffee County, the Secretary of State's Office replaced the county's remaining election equipment. Trial Tr. Vol. 11 at 219:25-220:18 (Evans). Before that time, the equipment was not quarantined and was connected to other hardware, including the replacement EMS and ICC, by removable media. Curling Pl. Ex. 471 ¶ 165. This could have resulted in the contamination of such hardware (like the replacement EMS and ICC that remained in service). *Id.*
- cc. The Secretary of State's Office has provided inconsistent testimony regarding when it learned about the Coffee County breaches. In a September 26, 2022 interview with 11Alive, Secretary Raffensperger stated that the Secretary of State's Office knew of the breaches in Coffee County "early" in 2021. Curling Pl. Ex. 575. Shortly after providing this answer, an

aide to Secretary Raffensperger corrected him off-camera, offering May 2021 as the date of the Secretary of State Office's investigation. Curling Pl. Ex. 146 at 1.

(4) Findings of Fact: The Defendants Took Insufficient Remedial Action in Response to the Numerous Identified Security Vulnerabilities

160. The Defendants did not provide any evidence that they have implemented any changes in cybersecurity, physical security, or training in response to Dr. Halderman's findings of cybersecurity vulnerabilities that were validated by CISA. They presented no witness from the Secretary of State's Office, the SEB, or otherwise who testified about any attempt Defendants have made to address the specific mitigation steps recommended by CISA. *See* Curling Pl. Ex. 89. Nor did they provide any evidence that such steps could not be implemented by the 2024 election.

161. Similarly, they did not provide any evidence that they have implemented any changes in response to the vulnerabilities identified by the Defendants' cybersecurity vendor Fortalice; or the breaches in Coffee County and subsequent uncontrolled distribution of election software and data.

(5) Findings of Fact: The Defendants Have Publicly Discredited Plaintiffs and Their Experts to Undermine Their Ability to Effectuate Change to Remedy Their Injury Through Means Other than the Court

162. Instead of addressing the vulnerabilities identified by Dr. Halderman, they have dismissed his findings as not “real world” and “a load of crap.” Section III.A.1.a.(2).(e) ¶ 142(a),(f).

163. Instead of addressing the vulnerabilities identified by Fortalice, their chosen cybersecurity vendor, they directed Fortalice to stop putting its findings in writing. Section III.A.1.a.(2).(e) ¶ 133(f). Fortalice ultimately decided to stop working with Defendants altogether. Section III.A.1.a.(2).(e) ¶ 134.

164. Instead of promptly investigating allegations pertaining to the security breaches in Coffee County, adequately responding to evidence indicating that such breaches occurred, and taking steps to ensure such breaches do not occur in other counties in the future, the Defendants publicly claimed that the Coffee County breach “did not happen,” Section III.A.1.a.(3) ¶ 159(x). As recently as November 2023, despite having full knowledge of the level of access SullivanStrickler, Jeffrey Lenberg, Doug Logan, and others were given to election equipment in Coffee County, the Defendants publicly claimed that “you cannot gain [Dr. Halderman’s] level of access” to an EMS server. Curling Pl. Ex. 613 (Blake Evans, appearing before the Senate Ethics Committee, November 1, 2023).

165. Meanwhile, Defendants made the “communications decision” to characterize the Plaintiffs and their experts as “election deniers” in the press, including by making the following statement about Plaintiffs’ experts: “[I]f the Ph.Ds don’t like being put in the same category as the pillow salesman, tough noogies, they should stop saying similar things.” *See* Trial Tr. Vol. 5A at 192:18-193:11 (Sterling).

166. This “communication strategy” does not comport with Defendants’ own definition of an election denier as “a person who denies the outcome of an election based not necessarily on fact but on theory and not evidence.” Trial Tr. 5A at 258:24-259:3 (Sterling). By this definition, Plaintiffs are not election deniers: their injury is their individual inability to know whether the printed BMD ballot—the ballot of record—is an accurate expression of their selections, not whether the outcome of any election is accurate, *see* Section II.B.1.a; and that injury is supported by ample evidence, not theory, *see* Section III.A.1. Thus, it appears the Defendants adopted this communication strategy for the purpose of discrediting Plaintiffs and their experts in false and damaging ways, undermining their ability to effectuate the change they feel is needed to protect the right to vote in Georgia through means other than the court, such as with the legislature.

b) Findings of Fact: Georgia’s BMD System Places the Responsibility of Verifying the Correct Operation of BMDs on Individual In-Person Voters

(1) Findings of Fact: Defendants Burden In-Person Voters with the Responsibility to Verify BMD Functionality

167. SEB rules require all in-person voters to use “ballots marked by electronic ballot markers.” Ga. Comp. R. & Regs. 183-1-12-.01. The Defendants’ requirement for voters to use BMD-printed ballots imposes a severe burden on the right of in-person voters to vote by foisting the responsibility for verifying the correct operation of BMDs onto in-person voters.

168. Defendants’ procedures for voting on BMDs require voters to review their BMD ballot selections *twice* before they can cast their votes—once “on the screen” and then a second time after the selections have been printed on the voter’s “printed ballot.” Defs. Ex. 1242 at 37 (“Vote on BMD” step requires voters to “review their choices and select ‘print ballot’”), 61 (listing both on-screen and printed-ballot review as part of voting); Trial Tr. Vol. 2 at 50:9-15, 109:19-22, 133:4-10 (Nakamura).

169. The SEB’s rules *require* in-person voters to perform the second step: “the voter *shall* ... review the selections on his or her printed ballot” prior to casting the ballot into a precinct scanner. Ga. Comp. R. & Regs. 183-1-12-.11(2)(b) (emphasis added).

170. Defendants' Poll Worker Manual provides for assistance stations to be set up to allow voters to perform this required second review, which would require voters to first make their selections on a BMD, then pull their "printed ballot" from the printer, then go to an assistance station to review their purported selections a second time, and then finally go to a scanner to cast their "printed ballot," with no way of knowing what is actually captured in the QR code, the portion of the ballot that is tabulated. Defs. Ex. 1242 at 39 ("Printed Ballot Review").

171. The second review (of the printed ballot) is entirely redundant if a BMD is operating properly, since the on-screen review has already given the voter a final opportunity, before "submitting" his or her selections, to ensure that the touchscreen captured the voter's preferred selections correctly. Trial Tr. Vol. 2 at 50:9-15, 109:19-22, 133:4-10 (Nakamura).

172. The sole apparent purpose of the required second review is to conscript each voter into ensuring that the BMD is operating properly in transferring the voter's already-reviewed selections onto the human readable portion of the BMD-printed paper ballot. Again, that Defendants acknowledge the need for—and even require—this second review concedes that they fully anticipate that the BMDs they selected, implemented, and require the counties to use may not accurately capture a voter's selections on the printed ballot, which is the voter's official ballot of record.

173. Because voters can only review the human readable portion of the printed paper ballot, the only errors any voter will even potentially be able to identify during the second review are errors shown by the human-readable text. Voters cannot identify errors in the QR code portion of the ballot because QR codes are not decipherable by humans. *See, e.g.*, Section III.A.1.a.(1); Trial Tr. Vol. 1 at 142:12-14 (Dufort).

174. In addition, generally the voter must conduct his or her review of the printed ballot completely from memory, Trial Tr. Vol. 2 at 50:9-15, 56:4-17 (Nakamura), without being able to refer back to the BMD touchscreen, because the touchscreen needlessly and inexplicably goes dark once the voter's selections are submitted on screen for printing, Trial Tr. Vol. 8A at 155:11-14 (Missett); Trial Tr. Vol. 1 at 143:7-10 (Dufort). Verification of a BMD ballot's content from memory is a difficult cognitive task for some voters, including CGG Members Dufort, Nakamura and Missett. Trial Tr. Vol. 1 at 142:23-143:15 (Dufort); Trial Tr. Vol. 2 at 56:4-17 (Nakamura); Trial Tr. Vol. 8A at 154:4-155:14 (Missett); Trial Tr. Vol. 9 at 138:6-14 (Stark).

175. The burden of having to conduct a verification of the accuracy of a BMD-printed ballot to ensure the BMD's correct functioning is neither speculative nor hypothetical—all in-person voters are required to check their printed ballots. Ga. Comp. R. & Regs. 183-1-12-.11(2)(b). As testimony by Individual Plaintiffs

and CGG Members showed, in particular Dr. Missett, Ms. Dufort, and Ms. Nakamura, voters will individually experience this burden in a particularized way every single time they vote on a BMD in Georgia’s current voting system. *See* Section II.B.1.a; Trial Tr. Vol. 1 at 142:23-143:15 (Dufort); Trial Tr. Vol. 2 at 56:4-17 (Nakamura); Trial Tr. Vol. 8A at 154:4-155:14 (Missett).

176. Mr. Sterling acknowledged that voters are in a hurry when they vote in person at the polls and “often” don’t correct problems like overvotes when voting “because they don’t want to go back and be embarrassed. They don’t have time. They have completed their process.” Trial Tr. Vol. 5A at 254:11-255:6 (Sterling). Yet in-person voters using a BMD are obliged to bear the burden of reviewing their printed ballots a second time on paper, after already reviewing them once on screen, even though they, too, often feel “a certain amount of pressure and anxiety” not to delay other voters by taking time to check their ballots a second time after printing them. Trial Tr. Vol. 8A at 155:15-157:12 (Missett); *see also* Section II.B.1.a. ¶ 76(a) (Schoenberg).

(2) Findings of Fact: Relying on In-Person Voters to Verify Their Printed Ballots Is Likely Ineffective as a Safeguard Against BMD Malfunctions

177. If a voter were to conduct the second review and were to identify an error on the human-readable portion of his or her printed BMD ballot, that voter could then only correct the identified error by bringing the error to the attention of

a poll worker and surrendering their ballot to be marked as spoiled. Ga. Comp. R. & Regs. 183-1-12-.11(10)(b); Trial Tr. Vol. 16B at 181:11-23 (Appel).

178. Poll workers who are presented with a voter's allegation that a BMD has malfunctioned will have to accept all the details given by the voter and will have no way to know independently whether the voter is being truthful or instead might be confused or even lying. Trial Tr. Vol. 14A at 98:8-12 (Gilbert); Defs. Ex. 1287 at 11-14; Trial Tr. Vol. 9 at 149:5-15 (Stark); Trial Tr. Vol. 16B at 181:16-182:10 (Appel).

179. Because a hack exploiting one of the established, unrefuted, unmitigated vulnerabilities with Georgia's BMD System as currently maintained by Defendants may be designed to affect only a very small percentage of ballots cast on a BMD, it is likely that spoiling a voter's ballot and permitting that voter to re-vote on even the same BMD would not produce a recurrence of the error initially experienced and caught by the voter. Trial Tr. Vol. 16B at 180:22-25 (Appel). In such a circumstance, the error originally reported by the voter for the earlier printed ballot would appear, both to officials and to the voter, to have been caused by the voter's own human error when voting the first time, rather than by a BMD malfunction or hack.

(3) Findings of Fact: Defendants Impose These Burdens for Purposes that Go Well Beyond Allowing the Voters to Cast Their Own Individual Votes

180. Defendants require voters to conduct a review of their printed ballots—after already reviewing their selections on the BMD screen—that is unduly burdensome and should be unnecessary from the voter’s perspective, because Defendants rely upon systematic voter review of BMD printed ballots as a “critical” mechanism that “makes the system reliable.” Trial Tr. Vol. 12 at 234:12-20, 235:17-236:6 (Adida).

181. Defendants require in-person voters (only) to conduct a difficult review of their printed ballots that is unduly burdensome and should be unnecessary from the voter’s perspective because Defendants wish to create public confidence in election outcomes. Trial Tr. Vol. 12 at 235:12-16 (Adida).

182. Defendants require voters to conduct a review of their printed ballots that is unduly burdensome and should be unnecessary from the voter’s perspective because Defendants want to ensure auditability of elections, which requires a reliable record of voter intent and, thus, that individual ballots of record be verified by each voter who cast a ballot in the election. Trial Tr. Vol. 14A at 104:10-105:5, 105:22-107:21 (Gilbert); Trial Tr. Vol. 13 at 162:9-17 (Kirk).

183. But even if a BMD error could be detected by a voter attempting to verify the human-readable text of a BMD-printed ballot, not enough voters review

their ballots to detect 90% of the errors or vote-flipping. Trial Tr. Vol. 16B at 202:15-19 (Appel). Because only a small portion of voters are careful enough to inspect their ballots, risk-limiting audits are not effective in identifying whether BMDs were hacked to alter voter selections. Trial Tr. Vol. 16B at 182:3-10 (Appel).

184. As referenced in the findings above, in-person voters do not uniformly check BMD-printed ballots and cannot accurately verify the correctness of those ballots. *See* Section III.A.1.a.

(4) Findings of Fact: Requiring In-Person Voters to Bear the Responsibility for Verifying BMD Functionality Is a Severe Burden on the Right to Vote

185. The burdens unequally imposed on in-person voters by Georgia's threatened enforcement of the Defendants' requirements for all in-person voters to vote using BMDs goes well beyond the merely inconvenient and is a severe burden on the fundamental right to vote in Georgia, as well as a burden on the right of in-person voters to enjoy equal protection of the law.

(5) Findings of Fact: Only In-Person Voters Are Saddled with This Severe Burden

186. Unlike in-person voters, Georgia voters who cast absentee by mail ballots are not required to conduct any verification of the proper functioning of Georgia's election equipment in order to be able to exercise their right to vote, and

thus, they are not subjected to the same burdens that in-person voters suffer. *See* Section III.A.1.c. ¶ 190.

**(6) Findings of Fact: Burdening Voters to Review
BMD-Printed Ballots Only Creates an Illusion of
Election Auditability**

187. Elections conducted primarily on BMDs cannot be audited because the evidence shows BMD ballot printouts cannot serve as a verified paper trail of the voter's selections. Trial Tr. Vol. 9 at 132:22-133:10, 136:11-137:18 (Stark). Thus, the public confidence that election audits are meant to provide for the correctness of election outcomes in Georgia is entirely illusory. Imposing the burden of requiring in-person voters to review their printed BMD ballots cannot be considered necessary where the evidence shows that the whole purpose of requiring voter review simply cannot realistically be achieved. *See* Section III.A.1.a.

188. Because BMD-printed ballots are untrustworthy and unreliable records of a voter's selected preferences, Trial Tr. Vol. 9 at 133:11-135:23, 136:11-137:18 (Stark), once it has been determined that BMDs have malfunctioned in an election, election outcomes cannot be corrected without running a new election. Defs. Ex. 1287 at 13-14; Trial Tr. Vol. 9 at 149:2-4, 149:21-150:3 (Stark).

(7) *Finding of Fact: Even a Detected Malfunction Imposes a Severe Burden Because the Defendants Have No Plan for Remedy*

189. Requiring in-person voters in Georgia to verify the proper functioning of BMDs in Georgia is a particularly severe burden because, in the event that voters identify potential malfunctions with the BMDs, Defendants do not have any plan that would provide affected voters a means of reliably casting their votes:

- a. Defendants' retained expert and chosen contractor for performing risk-limiting audits, Dr. Ben Adida, testified that relying on voters to review their ballots makes it so that, "even if the computers were infected with malware, we would have a way to detect and recover." Trial Tr. Vol. 12 at 285:8-286:2 (Adida).
- b. If a BMD is discovered to be compromised or otherwise malfunctioning in a way that alters votes, Mr. Sterling explained that Defendants' intended procedure is simply to "pull" that BMD out of service. Trial Tr. Vol. 5A at 201:19-207:14 (Sterling).
- c. Individual votes cannot be reliably cast and counted (and election outcomes cannot be corrected) without running a new election at least at each affected polling site and potentially

statewide depending on the scope and implications of the BMD failure(s). Defs. Ex. 1287 at 13-14.

- d. Georgia law requires the Defendants to be prepared to deploy hand-marked paper ballots as a backup voting system in the event the use of BMDs for in-person voters is rendered inoperable or unsafe, or its use becomes impossible or impracticable. Ga. Comp. R. & Regs. 183-1-12-.01; *see also* Curling Pl. Ex. 406; O.C.G.A. § 21-2-281.
- e. Despite the requirements in O.C.G.A. § 21-2-281, in 2019, the Court previously found that the “State does not have adequate resources or the necessary procedures in place to make the switch to [paper ballots]” Dkt. 579 at 148. As a result, this Court ordered Defendants to develop a plan “for the use of hand-marked paper ballots” for use in the 2020 elections, as required by Georgia law. Dkt. 579 at 147-48.
- f. Both Mr. Sterling and Mr. Mashburn testified that Defendants are still not prepared to make the switch to hand-marked paper ballots if necessary. Trial Tr. Vol. 16B at 117:17-118:13 (Sterling); Trial Tr. Vol. 6A at 97:3-11 (Mashburn). Mr. Mashburn testified: “the state of Georgia is not prepared to

handle 8 million paper ballots. We don't have the infrastructure. We haven't done the testing. We haven't put it in place. Georgia is nowhere near ready for that." Trial Tr. Vol. 6A at 97:3-11 (Mashburn). But Defendants are required by law to be ready for that, and the serious, unmitigated failings with Georgia's BMD System radically increase the need to be ready for all future elections to protect the right to vote in Georgia.

c) Findings of Fact: Voting Absentee By-Mail Does Not Effectively Mitigate the Burden Imposed by Georgia's BMD System

190. Several Individual Plaintiffs and CGG Members generally vote by mail using Georgia's absentee system, in light of their inability to verify that the BMD-printed ballot is a direct expression of their selections and the security risks inherent to Georgia's BMD System. Trial Tr. Vol. 1 at 137:8-138:3 (Dufort); Trial Tr. Vol. 1 at 200:25-201:9 (L. Digges); Trial Tr. Vol. 2 at 21:24-22:7 (Price); Trial Tr. Vol. 2 at 40:23-41:9 (W. Digges); Trial Tr. Vol. 2 at 49:20-50:15 (Nakamura); Trial Tr. Vol. 5A at 12:1-11 (Curling).

191. Georgia's by-mail absentee system is not a feasible alternative that effectively mitigates the burdens associated with voting in-person using BMDs as they are currently implemented and maintained by Defendants:

- a. There are inherent benefits of voting in-person. Jeff Schoenberg testified that voting in-person helps connect him with his community. Trial Tr. Vol. 1 at 70:6-14 (Schoenberg). Mr. Schoenberg discussed the special association he has with voting in-person, as he would take his young children to the polls with him to demonstrate the importance of voting, and currently takes his 98-year-old father to the polls. *Id.* at 70:15-25. Mr. Schoenberg remarked that other voters become inspired when they see Mr. Schoenberg's father voting in-person. *Id.* at 71:1-2.
- b. Other plaintiffs and CGG Members testified similarly about the benefits of voting in person. *See* Trial Tr. Vol. 1 at 148:13-149:4 (Dufort); Trial Tr. Vol. 1 at 202:2-5 (L. Digges); Trial Tr. Vol. 2 at 20:13-21:7 (Price); Trial Tr. Vol. 2 at 42:15-19 (W. Digges); Trial Tr. Vol. 5A at 8:15-18 (Curling). Voters using Georgia's by-mail absentee system are deprived of these benefits.
- c. To ensure that mailed-in absentee ballots are counted, voters are often forced to submit their votes well before the day of the election. Trial Tr. Vol. 1 at 74:19-21 (Schoenberg). Mr.

Schoenberg testified that voting that far before the day of the election is “uncomfortably early,” as it deprives a voter of the ability to receive and factor into their vote new facts and information that may arise at the close of an election. *Id.* at 74:13-21 (Schoenberg); Trial Tr. Vol. 1 at 202:6-12 (L. Digges).

192. Voting absentee by mail also does not ensure avoidance of the use of BMD-printed ballots, since a mail-in ballot may be converted to a BMD-printed ballot with a QR code (also referred to as “duplicating” the ballot), if the mail-in ballot cannot be scanned for any reason (such as fold marks or minor damage from opening the envelope). Trial Tr. Vol. 1 at 90:20-91:6 (Schoenberg); Trial Tr. Vol. 1 at 171:21-173:22 (Dufort); Trial Tr. Vol. 11 at 197:17-21 (Evans); Trial Tr. Vol. 13 at 52:2-53:10 (Evans); O.C.G.A. § 21-2-483.

193. Voting absentee by mail requires navigating an array of complicated administrative procedures that is far more difficult than voting in-person:

- a. For example, Donna Curling testified about the procedural difficulties with obtaining an absentee ballot. Trial Tr. Vol. 5A at 10:2-12 (Curling). Ms. Curling described how Georgia’s absentee laws have shifted, namely in that voters 65 and older are no longer sent absentee ballots without a request. *Id.* at

10:4-12 (Curling).

- b. Voters, regardless of their age, are now required to ensure they request their absentee ballot in time and to figure out the best way to return their ballot to make sure it is counted. *Id.* at 10:4-12 (Curling).
- c. Voters have described difficulties in receiving absentee ballots, so much so that they have given up requesting absentee ballots. Trial Tr. Vol. 8A at 153:23-154:3 (Missett).
- d. Even voters who are able to receive their absentee ballot application by electronic transmission must still print out the application, which often requires having an operating printer at their home. Trial Tr. Vol. 1 at 73:16-21 (Schoenberg).

194. The evidence also shows that voters who elect to vote absentee by mail may be disenfranchised as a result of deficiencies in how absentee ballots are mailed and processed:

- a. Donna Price testified to at least two instances in which she was disenfranchised after attempting to vote absentee by mail. In the first instance, while voting in the presidential preference primary in 2020, Ms. Price received two absentee ballots and destroyed the second, thinking that it had been sent in error.

Trial Tr. Vol. 2 at 24:18-25:6 (Price). Ms. Price later learned that the second ballot included additional candidates that were not on the original ballot she submitted. Ms. Price was instructed to email a request for a replacement ballot, which she did, yet Ms. Price never received a replacement ballot. *Id.* at 25:2-16 (Price).

- b. Ms. Price's second instance of disenfranchisement occurred during the 2020 primary runoff. *Id.* at 26:1-6 (Price). Ms. Price never received her ballot for this election. *Id.* at 26:8-11 (Price).
- c. Donna Curling testified that she has been disenfranchised on two occasions while voting with Georgia's absentee system. Trial Tr. Vol. 5A at 10:13-11:5 (Curling). Ms. Curling testified that she was not aware that her votes had not been counted until this trial, and that revelation was very upsetting to her. *Id.* at 11:6-11.

2. Conclusion of Law No. 3.B: Under *Anderson-Burdick* Step Two, Defendants Have Not Articulated Any Sufficiently Precise Interests in Requiring the Use of BMDs that Both Justify the Burdens Imposed and Make It Necessary to Burden Plaintiffs' Rights

a) Findings of Fact: Defendants' Articulated Interests in Georgia's BMD System Are Vague, Incoherent, and Fail to Justify the Use of Georgia's BMD System in Its Current Configuration

195. Defendants have not offered a clear, coherent articulation of the precise interests they believe justify requiring all in-person voters to use the BMDs and BMD Printers the Secretary of State selected and imposed as the statewide method for in-person voting. At summary judgment, Defendants articulated three interests: (1) a “concern about the potential manipulation and errors associated with hand-marked paper ballots,” (2) the U.S. Constitution’s grant of “significant leeway” to states when administering elections, and (3) an interest in “complying with state laws as they are written.” Dkt. 1567-1 at 47-48. At no point during trial—through a witness or otherwise—did Defendants offer a concrete explanation of what specific interests they purport to believe justify requiring in-person voters to vote using BMDs as they are currently implemented in Georgia. Instead, Defendants vaguely referenced a variety of generalized interests at various points throughout trial, some of which were not articulated at summary judgment.¹⁶

¹⁶ The Court previously held that it was “not clear that a generically invoked regulatory interest, such as a general interest ‘in conducting orderly elections’

Those appear to be: (1) an interest in maintaining a uniform voting system in every county in Georgia, Trial Tr. Vol 18 at 147:7-12 (Defs.’ Closing), Curling Pl. Ex. 607; (2) an interest in the smooth administration of elections, Trial Tr. Vol 17 at 147:7-147:9 (Defs.’ Closing); (3) an interest in enabling voters with disabilities to vote using the same machines as other voters, Trial Tr. Vol 10A at 118:12-118:19 (Germany); (4) an interest in minimizing costs to administer elections, Trial Tr. Vol 15 at 246:14-247:23 (Sterling); and (5) an interest in avoiding hand-marked paper ballots to minimize the risk they are mismarked by voters or later altered, Trial Tr. Vol 17 at 147:16-147:32 (Defs.’ Closing), Trial Tr. Vol 16B at 23:17-23:21 (Sterling).

(1) Findings of Fact: Defendants’ Articulated Interest in Uniformity Does Not Justify the Severe or Even Slight Burdens Imposed by Requiring In-Person Voters to Use BMDs as Currently Implemented and Does Not Make It Necessary to Require Those BMDs

196. Defendants seemed to articulate an interest in maintaining a uniform voting system across the state of Georgia. Trial Tr. Vol 18 at 147:7-12 (Defs.’ Closing); Trial Tr. Vol. 11 at 261:7-262:14 (Evans); Trial Tr. Vol. 15 at 246:11-25 (Sterling); *see also* Trial Tr. Vol. 6A at 44:18-45:4; 48:1-49:4 (Mashburn).

[could] justify the decision to maintain the current configuration of Georgia’s BMD voting system without adopting any of the remedial measures identified by CISA, Dr. Halderman, Fortalice, or other experts.” Dkt. 1705 at 120-21.

197. Requiring in-person voters to use the BMDs selected and maintained by the Secretary of State is not needed to achieve this asserted interest:

- a. Georgia law already requires every polling place to be prepared to use hand-marked paper ballots as a backup when the use of BMDs is impossible or impracticable (including if the required use of BMDs is found to be unconstitutionally burdensome for voters). Trial Tr. Vol. 16B at 71:25-72:2 (Sterling); *see* Section II.A.2.a ¶ 63. Hand-marked paper ballots are also required for use by voters casting provisional ballots at polling places. Defs. Ex. 1242 at 74-82. A voting system that permits all in-person voters to use hand-marked paper ballots would be uniform, just as Georgia law already contemplates and requires in certain circumstances.
- b. Georgia law does not dictate how municipalities have to run their elections and permits municipalities to choose to use hand-marked paper ballots to run such elections. Trial Tr. Vol. 13 at 13:2-8 (Evans). In 2023, eleven municipalities in Gwinnett County successfully ran their own elections using hand-marked paper ballots. *Id.* at 13:23-14:14 (Evans). A system permitting *all* in-person voters to use hand-marked paper ballots would be

more uniform, not less uniform.

- c. Georgia law does not require the use of QR codes to tabulate ballots. Trial Tr. Vol. 5A at 165:20-165:13 (Sterling). A system printing human-readable ballots with no QR code would also be uniform.
- d. Defendants' retained expert and chosen contractor for performing risk-limiting audits, Dr. Ben Adida, recommends using hand-marked paper ballots and one BMD (to accommodate accessibility needs) 99% of the time. Trial Tr. Vol. 12 at 278:21-279:1 (Adida). This system, if used in every county, would also be uniform statewide.

198. The burden on the right to vote imposed on in-person voters who are forced to vote using the BMDs selected and maintained by the Defendants is severe. Section III.A.1. But because those BMDs are not needed to maintain a uniform voting system, the asserted interest would fail to justify requiring in-person voters to vote using BMDs even if the burden of doing so were slight.

(2) Findings of Fact: Defendants' Articulated Interest in Ease of Administration Does Not Justify the Severe or Even Slight Burdens Imposed by Requiring In-Person Voters to Use BMDs as Currently Implemented and Does Not Make It Necessary to Require Those BMDs

199. Defendants seemed to articulate an interest in the smooth

administration of elections and to claim that the Dominion BMDs selected and imposed on voters by the Secretary of State help enable early in-person voting in Georgia. Trial Tr. Vol. 10A at 127:22-129:8 (Germany).

200. Requiring in-person voters to use the BMDs selected and maintained by the Secretary of State is not needed to achieve this asserted interest because the evidence shows Georgia's BMD System is administratively complex and difficult:

- a. Georgia's BMD system depends on a vast amount of equipment, including over 30,000 BMDs and 30,000 printers. Trial Tr. Vol. 11 at 186:21-187:2 (Evans); Trial Tr. Vol. 12 at 56:13-16 (M. Barnes).
- b. Each BMD and BMD Printer must be set up by county election workers each election, which requires, among other things: securely storing BMDs, maintaining chain of custody over all voting equipment (including checking and documenting the serial numbers on the State-provided seals on BMDs), connecting the BMDs and printers to power, supplying back-up power supply batteries for each BMD, setting up BMDs in compliance with voter privacy requirements, conducting acceptance testing and Logic and Accuracy testing on the BMDs, and addressing technical and other problems with the

equipment as they arise. *See* Defs. Ex. 1242 (poll worker manual) at 19-29 (opening procedures), 88-98 (closing procedures), 99-103 (troubleshooting); Trial Tr. Vol. 12 at 11:15-12:15 (M. Barnes); Trial Tr. Vol. 13 at 134:21-145:3 (Kirk).

- c. Properly administering Georgia's BMD System requires training election officials in each of Georgia's 159 counties on each of the above-listed procedures. Trial Tr. Vol. 13 at 34:2-14 (Evans); Defs. Ex. 1242. As explained above, however, this has proven to be a significant challenge, as the evidence demonstrates numerous problems from past elections, including missing or broken seals, BMDs with votes already cast on them, and reports of officials failing to follow proper procedures. *See* Section III.A.1.a.(2).(g) ¶ 146.
- d. As shown by the Secretary of State's Office's difficulties with the planned upgrade to Democracy Suite 5.17—which still has no timeline for completion and, according to Elections Director Blake Evans, cannot be done by the November 2024 elections—applying necessary software updates to Georgia's BMD System also presents enormous logistical problems,

requiring laying hands on each piece of election equipment in Georgia (including updating over 30,000 BMDs, which takes around 20 minutes per BMD, potentially replacing over 30,000 printers if full-face ballots are adopted, and updating the EMS, which takes several hours), in addition to conducting testing on a planned software update and resolving critical failures that arise from such testing. *See* Section III.A.1.a.(2).(d).

- e. In addition, the numerous security vulnerabilities with Georgia's BMD System described above, as identified by Dr. Halderman and validated by CISA, also add the significant administrative difficulties of taking steps to mitigate those vulnerabilities. Indeed, these difficulties are apparently so severe that there is still no evidence that Defendants have taken *any* steps to implement CISA's recommendations or otherwise mitigate the vulnerabilities validated by CISA. *See* Sections III.A.1.a.(2).(d), III.A.1.a.(4). The costs of properly remediating the identified vulnerabilities with Georgia's BMDs would be "enormous." Trial Tr. Vol. 8A at 32:1-8 (Halderman).

201. By contrast, hand-marked paper ballots are proven to be easy to

administer, cost-effective, secure, and provide for reliable elections with voter-verified ballots of record:

- a. The vast majority of counties in the United States administer elections using other voting systems, overwhelmingly hand-marked paper ballots with scanners for tabulation—just like Georgia’s existing, legally-mandated backup voting system. Indeed, only *seven counties* outside of Georgia, nationwide, use the Dominion ICX as the primary form of in-person voting. Trial Tr. Vol. 7B at 216:8-217:13 (Halderman).
- b. Georgia’s Elections Director, Blake Evans, testified that he had successfully administered early in-person voting at centralized vote centers in Escambia County, Florida (where he previously was the county election director) by using hand-marked paper ballots and ballot-on-demand printers. Trial Tr. Vol. 13 at 14:15-15:14 (Evans).
- c. Georgia law does not dictate how municipalities have to run their elections; municipalities can therefore choose to use hand-marked paper ballots to run such elections. Trial Tr. Vol. 13 at 13:2-8 (Evans). In 2023, eleven municipalities in Gwinnett County successfully ran their own elections using hand-marked

paper ballots, one of which (Peachtree Corners) has a population of over 42,000 residents, which is greater than the population of 110 Georgia counties. Trial Tr. Vol. 13 at 14:2-14 (Evans). Defendants introduced no evidence at all refuting the obvious inference from these numerous municipal elections that Defendants' apprehensions about the difficulty of conducting large elections in Georgia using hand-marked paper ballots are overblown.

- d. Georgia law already requires every polling place to be prepared to use hand-marked paper ballots as a backup when the use of BMDs is impossible or impracticable, as well as for provisional ballots. *See* Section II.A.2.(a) ¶ 63.
- e. The only Georgia county election official who testified at trial for Defendants said that his county would be ready to implement the backup hand-marked paper ballots if there was an issue with the BMDs during early voting, and that a ballot-on-demand printer would be helpful to improve that backup process. Trial Tr. Vol. 13 at 174:20-175:19 (Kirk).
- f. Ballot-on-demand printers are used by Georgia counties today to create absentee, emergency, and provisional ballots. Trial

Tr. Vol. 16B at 18:19-19:5 (Sterling).

- g. As explained in detail by Dr. Halderman, hand-marked paper ballots are also far less susceptible to attacks than Georgia's BMD system, especially because the ballots of record are voter-verified and thus permit detection of, for example, manipulation of scanners or mistakes (such as mismarks) that voters might make. Trial Tr. Vol. 8A at 62:24-63:22, 74:3-9, 74:21-75:13, 101:13-102:9, 103:16-23, 128:5-9, 129:2-6, 132:15-133:8 (Halderman); Trial Tr. Vol. 13 at 15:21-16:18 (Evans).
- h. Defendants' retained expert and chosen contractor for performing risk-limiting audits, Dr. Ben Adida, also recommends using hand-marked paper ballots and one BMD (to accommodate accessibility needs) 99% of the time. Trial Tr. Vol. 12 at 278:21-279:1 (Adida).

202. The burden on the right to vote imposed on in-person voters who are forced to vote using the BMDs selected and maintained by the Defendants is severe. Section III.A.1. But because those BMDs are not needed to ease the administration of elections, that asserted interest fails to justify requiring in-person voters to vote using BMDs even if the burden of doing so were slight.

(3) Findings of Fact: Defendants' Articulated Interest in Ensuring Access to Voters with Disabilities Does Not Justify the Severe or Even Slight Burdens Imposed by Requiring In-Person Voters to Use BMDs as Currently Implemented and Does Not Make It Necessary to Require Those BMDs

203. Defendants seemed to articulate an interest in ensuring people with disabilities do not have to vote on different equipment than voters without disabilities. Trial Tr. Vol. 10A at 118:12-19 (Germany).

204. Requiring in-person voters to use the BMDs selected and maintained by the Secretary of State is not needed to achieve this asserted interest:

- a. Defendants currently provide voting equipment for voters with disabilities that already is readily identifiable, different, and separate from the voting equipment used for other voters. Trial Tr. Vol. 10A at 161:19-163:3 (Germany).
- b. Georgia's Election Director, Blake Evans, acknowledged that there is nothing inappropriate about providing separate assistive equipment for voters with disabilities, thereby dispelling the contrary interest vaguely asserted by Defendants. Trial Tr. Vol. 11 at 185:1-16 (Evans). He further acknowledged that other jurisdictions, including the Florida county where he previously was the county election director, provide different, separate

voting methods for voters with disabilities who need electronic voting assistance (such as a BMD) and those who do not. Trial Tr. Vol. 11 at 15:15-16:2, 185:1-13 (Evans).

- c. Defendants' retained expert and chosen contractor for performing risk-limiting audits, Dr. Ben Adida recommends using hand marked paper ballots and one BMD to accommodate accessibility needs 99% of the time; thus, Defendants' own election expert rejected the interest Defendants seemingly asserted regarding voters with disabilities needing to vote in the same manner as all other voters. Trial Tr. Vol. 12 at 278:21-279:1 (Adida).
- d. No voter who openly identified as disabled, nor any organization purporting to speak on behalf of voters with disabilities, testified at trial or otherwise endorsed or offered any support for the interest asserted by Defendants.

205. The burden on the right to vote imposed on in-person voters who are forced to vote using the BMDs selected and maintained by the Defendants is severe. Section III.A.1. But because those BMDs are not needed to aid voters with disabilities and offer no advantages to voters with disabilities when compared to a system that utilizes hand-marked paper ballots with BMDs to accommodate

accessibility, the asserted interest would fail to justify requiring in-person voters to vote using BMDs even if the burden of doing so were slight.

(4) Findings of Fact: Defendants' Articulated Interest in Minimizing Costs Does Not Justify the Burdens Imposed by Requiring In-Person Voters to Use BMDs as Currently Implemented and Does Not Make It Necessary to Require Those BMDs

206. Defendants seemed to articulate an interest in minimizing costs and claimed that any change to the voting system would create an unknowable cost. Trial Tr. Vol. 15 at 246:14-247:23 (Sterling).

207. Requiring in-person voters to use the BMDs selected and maintained by the Secretary of State is not needed to achieve this asserted interest:

- a. Georgia law already requires polling places to have emergency hand-marked paper ballots on site during Election Day and early in-person voting, and to be prepared to immediately switch to hand-marked paper ballots for all voters voting in that election, including during Election Day. O.C.G.A. §§ 21-2-281 & -334; Ga. Comp. R. & Regs. 183-1-12-.11(2)(c)-(d); Trial Tr. Vol. 11 at 89:3-89:7 (Evans); Defs. Ex. 1242 (poll worker manual) at 70, 72 (describing voting procedures for emergency hand-marked paper ballots); *see* Section II.A.2.a ¶ 63. Thus, Defendants and Georgia counties already are statutorily

required to incur the costs associated with implementing hand-marked paper ballots statewide, to be prepared for that eventuality. Trial Tr. Vol. 13 at 174:20-175:6 (Kirk).

- b. Defendants, as Mr. Sterling and Mr. Mashburn testified, have apparently refused to comply with Georgia law (and this Court's 2019 Order) requiring the State and counties to be prepared to switch to hand-marked paper ballots for any given election. Trial Tr. Vol. 6A at 96:20-97:11 (Mashburn); Trial Tr. Vol. 16B at 100:10-102:23 (Sterling); Dkt. 579 at 148. But Defendants' refusal to comply with the law—and any cost savings that might stem from that refusal—cannot justify the burdens associated with voting in-person on BMDs as currently implemented in Georgia, particularly when weighed against the strong and compelling public interest in Defendants complying with Georgia law and in having a reliable and ready-to-go backup voting system.
- c. Defendants offered no evidence or even enumeration of the purported costs they seemed to claim justify the burdens imposed on voters by the BMDs selected and administered by the Secretary of State. The only cost “estimate” Defendants

offered concerned implementing a new Dominion software upgrade (Democracy Suite 5.17), but even that “estimate” was greatly inflated because it included substantial costs already incurred in adopting and administering the *current* BMD System. Trial Tr. Vol. 15 at 250:17-251:6 (Sterling).

- d. Defendants also offered no evidence or explanation for how removing some 30,000 BMDs plus some 30,000 BMD Printers, Trial Tr. Vol. 11 at 186:21-187:3 (Evans), would not *necessarily* greatly reduce the costs associated with the administration, maintenance, and security of Georgia’s voting system in a variety of ways, including eliminating the costs of maintaining and updating that equipment, as well as training officials across the state on how to use, maintain, and secure the equipment. *See* Section III.A.2.a.(2).

208. The burden on the right to vote imposed on in-person voters who are forced to vote using the BMDs selected and maintained by the Defendants is severe. Section III.A.1. But because those BMDs are not needed to save costs—and indeed removing those BMDs and associated BMD Printers would achieve costs savings—the asserted interest would fail to justify requiring in-person voters to vote using BMDs even if the burden of doing so were slight.

(5) ***Findings of Fact: Defendants’ Articulated Interest in Avoiding Hand-Marked Paper Ballots Does Not Justify the Burden Imposed by Requiring In-Person Voters to Use BMDs as Currently Implemented and Does Not Make It Necessary to Require Those BMDs***

209. Defendants seemed to articulate an interest in avoiding hand-marked paper ballots entirely because they may be mismarked by voters or purportedly altered by third parties after the fact. Trial Tr. Vol 17 at 147:16-147:32 (Defs.’ Closing); Trial Tr. Vol. 16B at 23:17-23:21 (Sterling).

210. The asserted interest in avoiding purported challenges with in-person hand-marked paper ballots does not make it necessary to require the use of BMDs for in-person voters.

- a. Defendants offered no evidence at trial to substantiate any concern regarding over-votes (“mismarks”). The only example of such a mismarked ballot presented by Defendants at trial would not actually be tabulated by a Georgia precinct scanner, thereby refuting the asserted interest as unsubstantiated and unrealistic. Trial Tr. Vol. 5A at 253:9-19 (Sterling).
- b. Georgia law ***requires*** that polling place scanners reject over-voted ballots for voters to correct. O.C.G.A. §§ 21-2-365(5), 21-2-483(g); Trial Tr. Vol. 9 at 146:21-25 (Stark). No precinct scanner in the state would accept a ballot with an over-vote.

Trial Tr. Vol. 16B at 87:8-10 (Sterling). Georgia's current scanning equipment is designed to notify in-person voters if their ballot contains an overvote and to give them an opportunity to correct that issue. Trial Tr. Vol. 13 at 15:21-16:18 (Evans); Trial Tr. Vol. 14A at 69:9-13 (Gilbert); Trial Tr. Vol. 16B at 86:24-87:10 (Sterling).

- c. Georgia currently requires absentee by-mail voters to use hand-marked paper ballots, but an absentee voter is not afforded an opportunity to correct their ballot if the central scanner rejects it because of an overvote. Trial Tr. Vol. 11 at 27:14-27:18 (Evans); Trial Tr. Vol. 16B at 86:24-87:17 (Sterling).

Defendants offered no explanation for why in-person voters must be afforded such an opportunity when other voters are not, especially to justify the burdens imposed by the current BMD System, including if those burdens are slight.

- d. An attempted manipulation of an undervote—meaning that a voter intentionally leaves a contest blank without making a selection, and an insider later alters the ballot to add an illegitimate selection (Trial Tr. Vol. 14A at 65:3-16 (Gilbert))—would likely be detected in a hand-marked paper

ballot system. Scanners are configured to take a digital image of the ballot when the voter places the ballot into the scanner. Trial Tr. Vol. 8A at 62:24-64:1 (Halderman). This makes it possible to detect when a corrupt insider has altered the ballot after scanning, since the altered ballot would not match the captured image of the ballot (e.g., it would show that the voter had left a contest blank). *See* Trial Tr. Vol. 8A at 101:13-102:9 (Halderman). In addition, hand-marked paper ballots can be designed to provide a checkbox for “no selection.” Trial Tr. Vol. 14A at 68:14-69:6 (Gilbert).

- e. Again, Defendants’ retained expert and chosen contractor for performing risk-limiting audits, Dr. Ben Adida, recommends using hand marked paper ballots (and one BMD to accommodate accessibility needs) 99% of the time; thus, Defendants’ own election expert contradicted the interest Defendants asserted regarding avoiding purported challenges with hand-marked paper ballot voting. Trial Tr. Vol. 12 at 278:21-279:1 (Adida).
- f. The vast majority of counties in the United States administer elections using hand-marked paper ballots with scanners for

tabulation; only *seven counties* outside of Georgia nationwide use the Dominion ICX as the primary form of in-person voting. Trial Tr. Vol. 7B at 216:8-217:13 (Halderman).

211. In addition, hand-marked paper ballots are far less susceptible to attacks than Georgia's BMD System.

- a. Georgia's current scanning equipment captures an image of each ballot cast in-person at the time the voter places it in the scanner for tabulation. This provides a second record of the voter's ballot at the time they cast their ballot into the lockbox, even if the paper ballot is later altered by a corrupt insider or an insider attempts a ballot box stuffing attack. Trial Tr. Vol. 8A at 62:24-64:1 (Halderman). Thus, an attempt to modify a hand-marked paper ballot (e.g., with a pen) would be far more likely to be detected than the various possible ways of modifying a BMD ballot, since there is a contemporaneous digital record of the voter-verified hand-marked paper ballot captured at the time the voter places it into the scanner for tabulation. Trial Tr. Vol. 8A at 101:13-102:9 (Halderman).
- b. Crucially, because hand-marked paper ballots provide a voter-verified ballot of record, sufficiently robust audits of hand-

marked paper ballots are able to detect a variety of attacks or errors (and make the necessary corrections) that would be very difficult to detect in Georgia's current BMD System. Trial Tr. Vol. 8A at 74:3-75:3 (Halderman). For example, in a hand-marked paper ballot system, sufficient audits would be able to detect attacks that manipulate ballot data via the EMS, unlike in Georgia's BMD system where it would likely be impossible to correct. *Id.*

- c. In a hand-marked paper ballot system, a photocopied ballot would be "obvious" to distinguish from a genuine hand-marked ballot; by contrast, a photocopy of a BMD-printed ballot may look indistinguishable from the genuine ballot. Trial Tr. Vol. 8A at 81:8-16 (Halderman).
- d. In a hand-marked paper ballot system, it would also be possible to recover votes after discovering on Election Day that a ballot scanner had been hacked, since there is both the hand-marked paper ballot and the captured image of the hand-marked paper ballot at the time it was placed into the scanner. Because a hand-marked paper ballot system provides a voter-verified ballot of record, an attack such as a hacked scanner would not

generally disenfranchise affected voters. By contrast, in Georgia's BMD System, there may be no way to correct votes from a hack discovered midway through Election Day. Trial Tr. Vol. 8A at 128:5-9, 129:2-6, 132:6-14 (Halderman).

- e. By contrast, as explained above in detail, Georgia's BMD System suffers from numerous critical security vulnerabilities that can be readily exploited in many different ways to alter ballots on a massive scale. *See* Section III.A.1.a.

212. The burden on the right to vote imposed on in-person voters who are forced to vote using the BMDs selected and maintained by the Defendants is severe. *See* Section III.A.1. But because those BMDs are not needed to achieve the asserted interest in avoiding mismarks or other purported problems with hand-marked paper ballots, and because the evidence demonstrates that hand-marked paper ballots are significantly more secure and less susceptible to attacks than Georgia's BMD System, the asserted interest would fail to justify requiring in-person voters to vote using BMDs even if the burden of doing so were slight.

B. Conclusion of Law No. 4: Defendants Proximately Cause and Will Continue to Cause the Burden on the Right to Vote

1. Findings of Fact: There Is a Causal Connection Between the Defendants' Actions and Omissions and the Burden Georgia's BMD System Imposes on the Right to Vote

213. In light of the factual findings above regarding the Defendants'

control of Georgia's BMD System, Section II.A.2, the Defendants' slow and ineffective response to the Coffee County breaches, Section III.A.1.a.(3), and the Defendants' failure to take sufficient remedial action in response to numerous identified security vulnerabilities, Section III.A.1.a.(4), there is sufficient proof of a causal connection between the Defendants' challenged conduct and the Plaintiffs' ongoing and imminent injuries and Constitutional burdens.

IV. INJUNCTIVE RELIEF FACTORS: CONCLUSIONS OF LAW AND SUPPORTING FINDINGS OF FACT

A. Conclusion of Law No. 5: The Injunctive Relief Factors Favor Granting Injunctive Relief

1. Findings of Fact: There Is a Substantial Risk of Irreparable Harm

214. In light of the factual findings above regarding Defendants' slow and ineffective response to the Coffee County breaches, Section III.A.1.a.(3), Defendants' failure to take sufficient remedial action in response to numerous identified security vulnerabilities, Section III.A.1.a.(4), and the burdens on voting imposed on in-person voters who are required to use BMDs as the standard method of in-person voting, Section III.A.1.a.(1), Section III.A.1.b, there is a substantial risk irreparable harm will result if the Court does not order injunctive relief.

2. Findings of Fact: Any Harm to Defendants Imposed by Injunctive Relief Is Outweighed by the Public's Interest in Ensuring the Integrity and Security of Georgia's Elections

215. It is feasible for Defendants to stop requiring the use of BMDs as the

standard method for in-person voting, even if doing so means adopting a different standard method for in-person voting. The Court previously used its equitable powers to enjoin Defendants from using the GEMS/DRE system in conducting elections after 2019. Dkt. 579 at 147-48. As was the case with the GEMS/DRE system, compliance with an Order from this Court enjoining Defendants from requiring all in-person voters to use BMDs and BMD Printers as currently implemented can be achieved in harmony with existing state law.

216. Other forms of injunctive relief are also feasible. As merely two examples:

- a. The Court may require Defendants to immediately develop a concrete plan for deploying hand-marked paper ballots in the event any component of Georgia's BMD System selected and maintained by Defendants is rendered impossible or impracticable, in accordance with current Georgia law. The Court previously ordered the Defendants to develop a plan "for the use of hand-marked paper ballots" for use in the 2020 elections as a "default backup option". Dkt. 579 at 147-48. Defendants remain unprepared to deploy hand-marked paper ballots as a backup option in the event Georgia's BMD System is rendered impossible or impracticable, despite the existing

requirement under Georgia law for it to be prepared to do so.

See Section II.A.2.a. ¶ 189(f).

- b. The Court may enjoin the Defendants from preventing counties to exercise their own discretion to determine whether and when to switch to hand-marked paper ballots in lieu of Georgia’s BMD System. Currently, the Defendants prevent counties from deciding on their own to use hand-marked paper ballots in lieu of Georgia’s BMD System, *see* Section II.A.2.a. ¶¶ 62-68, despite state law granting that authority to superintendents, O.C.G.A. §§ 21-2-281 & -334. The only justification for this rule supported by evidence is Defendants’ interest in maintaining a uniform system. *See* Section II.A.2.a. ¶¶ 62-68. For the reasons stated above, that interest does not justify requiring all in-person voters to vote using the BMDs and BMD Printers selected and implemented by the Secretary of State. *See* Section III.A.2.a.(1). Furthermore, Defendants took the position that “most” of the oversight of the security of the election equipment “lies in the county level.” Trial Tr. Vol. 5A at 217:24-218:9 (Sterling); *see also id.* at 216:10-14 (Sterling) (stating belief that the “legal authority to protect the equipment

... lies with the county.”).

217. Defendants did not present evidence of a set of concrete harms that would be associated with injunctive relief the Court could grant to remedy Plaintiffs’ injury.¹⁷ The most concrete harm identified by Defendants’ witnesses appears to be the cost of eliminating QR codes through a software and hardware update of the BMD System, which Mr. Sterling estimated would near \$25 million. Trial Tr. Vol. 16B at 9:20-11:5 (Sterling).

218. That harm is outweighed by the current threat Georgia’s BMD System poses to election security and integrity:

- a. There is a substantial risk that Georgia’s BMD System could be compromised in a way that causes voters’ selections to be switched, or for an attack that is detected to create chaos and disenfranchise voters, including the Individual Plaintiffs and CGG Members. *See* Section III.A.1.a.(2).
- b. The risk to future elections using Georgia’s BMD System is particularly pronounced because, as Plaintiffs’ expert Dr. Andrew Appel explained, even if some voters detected a hack, they would have “no way of proving it and there would be no

¹⁷ Plaintiffs reserve all rights to respond to additional harms cited in Defendants’ proposed findings of fact and conclusions of law that were not presented at trial.

consequence or way to correct the outcome of the election.”

Trial Tr. Vol. 16B at 182:3-10 (Appel).

- c. In addition, even if an attack were detected, detection may be the very goal of an attacker who seeks to create chaos and disenfranchise voters. Dr. Halderman explained how a few dozen people who implement attacks on BMDs in Georgia on Election Day would result in chaos, and “it would take tremendous work to figure out the full scope of that chaos.” Trial Tr. Vol. 7B at 217:17-218:1 (Halderman).
- d. Mr. Sterling agreed that a bad actor may have the goal to cause chaos in Georgia’s elections. Trial Tr. Vol. 5A at 187:12-17 (Sterling).

219. The BMD misconfiguration in Northampton County, Pennsylvania provides an illustrative example of how such resulting chaos can infringe on the right to vote.

- a. In November 2023, Northampton used ballot-marking devices to conduct an election. Trial Tr. Vol. 9 at 67:25-68:2, 72:3-14 (Skoglund). The incident in Northampton occurred when the ballots were programmed in a way that switched a voter’s selections such that their selection on the screen did not match

the selection on the printed ballot. Trial Tr. Vol. 9 at 72:3-14 (Skoglund).

- b. The problem existed countywide, on every single ballot. Trial Tr. Vol. 16B at 157:19-158:4 (Skoglund). Just two of the 156 precincts in the county notified the county. *Id.*
- c. Chaos ensued. Some polling places shut down voting entirely. *Id.* at 158:14-21. It is unclear whether voters in those polling places returned to vote or not. *Id.*
- d. Some voters were even told to vote against their preference so that the printed ballot would be correct. *Id.* As Kevin Skoglund explained, “[t]hat turned out to be tragic because it was later determined that the issue was that the barcodes were correct and the human text was wrong. So those voters voted a vote against their preference.” *Id.*

220. The State of Georgia is not prepared to prevent mass-disenfranchisement in the event of such an attack.

- a. If a BMD is discovered to be compromised, Mr. Sterling explained that the proper procedure is to “pull” that BMD out of service. Trial Tr. Vol. 5A at 201:19-207:14 (Sterling). Mr. Sterling conceded that voters who had voted on a removed

BMD would be disenfranchised. Trial Tr. Vol. 5A at 206:18-207:11 (Sterling).

- b. Dr. Halderman testified that even with “careful inspection,” it is unclear that the State could discern how many BMDs were actually affected. Trial Tr. Vol. 7B at 217:17-218:1 (Halderman). And, regardless, “by that time, voters’ ballots will be in a ballot box from people who didn’t notice the problem.” *Id.* at 218:2-7. Any ballot in the whole polling place might have been affected. *Id.*
- c. With the machines rendered unsafe and inoperable, the Defendants would need to turn to its emergency procedure to rerun the election using hand-marked paper ballots. Trial Tr. Vol. 5A at 201:19-207:14 (Sterling). But as both Mr. Sterling and Mr. Mashburn testified, the Defendants are not prepared to run an election using hand-marked paper ballots. Trial Tr. Vol. 16B at 117:17-118:13; Trial Tr. Vol. 6A at 97:3-11 (Mashburn). There is no evidence of any other procedure the Secretary of State or State Election Board could employ to prevent the disenfranchisement of voters if this occurs. The public has a paramount interest in ensuring it does not.

V. PROPOSED ORDER

THEREFORE, the Court GRANTS the following permanent injunctive relief:

1. Defendants are hereby enjoined from requiring or allowing the use of Dominion BMDs and associated printers in primaries, elections, or runoffs (hereafter “Election(s)”) after July 1, 2024;¹⁸
2. Provided, however, that Defendants shall require that each polling location provide at least one BMD and associated printer for voters who request

¹⁸ The selected date is four months away from the filing of these proposed findings and conclusions. An alternative date that is certainly permissible under *Purcell* could be September 1, 2024, which is six months away. In *League of Women Voters of Fla.*, the Eleventh Circuit held an election was “sufficiently close at hand” to stay an injunction because the Supreme Court had recently stayed an injunction for the election “about four months away” and elections in question were closer than that, thus within *Purcell*’s “outer bounds.” *League of Women Voters of Fla., Inc. v. Fla. Sec’y of State*, 32 F.4th 1363, 1371 (11th Cir. 2022) (citing *Merrill v. Milligan*, 142 S. Ct. 879, 880 (2022)). Later in 2022, though, the Eleventh Circuit decided not to stay an injunction for elections that were five months away because doing so “would extend the ‘eve of an election’ farther than we have before.” *Jacksonville Branch of the NAACP v. City of Jacksonville*, 2022 WL 16754389, at *6 (11th Cir. Nov. 7, 2022) (unpublished). Applying these cases, Judge Boulee of this Court recently concluded *Purcell* did not bar an injunction aimed at elections six months away. *See In re Ga. Senate Bill 202*, 2023 WL 5334582, at *85 (N.D. Ga. Aug. 18, 2023) (Boulee, J.); *see also GRACE, Inc. v. City of Miami*, 2023 WL 4602774, at *2 (S.D. Fla. June 7, 2023) (declining to apply *Purcell* “nearly six months prior to an election”). Consistent with these decisions, this Court itself granted an injunction against DREs in this case on August 15, 2019 (Dkt. 579), which was about 5½ months before the first 2020 election affected by that injunction (the January 28, 2020, Special Election for HD 171).

them for accessibility;¹⁹

3. Defendants are hereby enjoined from discouraging or taking any action to prevent or impede county superintendents from exercising their statutory discretion to conduct voting by hand-marked paper ballots when and if they determine that BMDs are “impossible” or “impracticable” (including whether the BMDs are unsafe or inoperable) to use for voting pursuant to O.C.G.A §§ 21-2-281 and -334;

4. Before every primary and election, Defendants shall direct every county superintendent to have each BMD that will be used in any Election tested to ensure that each BMD will correctly record and tabulate every vote cast for all offices and on all questions and produce a correct paper ballot reflecting each such selection by each voter using that BMD, in compliance with O.C.G.A. § 21-2-379.25(c);

5. Defendants shall direct every county superintendent to prohibit use of any BMD, associated printer, or precinct scanner in any Election that has one or more broken or missing security seals, until such equipment has been tested to confirm that it will correctly record every vote cast for all offices and on all

¹⁹ As referenced during Plaintiffs’ closing argument and above, *supra* note 8, the Court need not wait to order relief in this case until it has prepared its order on the full scope of Plaintiffs’ relief. Provisions (3) through (11) below represent relief the Court could grant immediately.

questions and produce a correct paper ballot reflecting each such selection by each voter using that BMD;

6. Defendants shall file with the Court, within 90 days, documentation confirming the complete effectuation (and the specific timing thereof) of each of the mitigation measures that CISA advised in its June 2022 Advisory should be adopted as soon as possible; Defendants shall certify under oath that all such measures have been undertaken;

7. Defendants shall file with the Court, within 30 days, detailed documentation identifying each procedure for ensuring proper chain of custody of each component of Georgia's voting system and ensuring those procedures are reliably and consistently implemented, including documenting chain of custody at the county and state level (including required reporting of non-compliance or chain of custody security failures);

8. Defendants shall file with the Court, within 30 days, a written state-wide plan for the use of hand-marked paper ballots as a backup voting system. Defendants shall include with such plan county-specific plans prepared by every county superintendent for the use of hand-marked paper ballots as a backup voting system. The plan must provide sufficient measures to ensure that Defendants and each county is prepared to immediately implement that backup system to enable all voters voting in any Election to cast their votes, in compliance with O.C.G.A.

§§ 21-2-281 and -334;

9. Within 30 days, under its authority for promulgation of Election Rules (Ga. Comp. R. & Regs. 183-1-1-.01), the State Election Board shall propose for adoption rules addressing requirements for the identification, reporting, mitigation and remediation of voting system security incidents and vulnerabilities.

10. For Election recounts conducted under O.C.G.A. § 21-2-495 of BMD elections, such recounts shall be conducted by manual recount as required by O.C.G.A. § 21-2-379.23(d).

Respectfully submitted this 1st day of March, 2024.

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**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

**DONNA CURLING, ET AL.,
Plaintiffs,**

v.

**BRAD RAFFENSPERGER, ET AL.,
Defendants.**

Civil Action No. 1:17-CV-2989-AT

CERTIFICATE OF COMPLIANCE

Pursuant to LR 7.1(D), I hereby certify that the foregoing document has been prepared in accordance with the font type and margin requirements of LR 5.1, using font type of Times New Roman and a point size of 14.

/s/ David D. Cross

David D. Cross

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CERTIFICATE OF SERVICE

I hereby certify that on March 1, 2024, a copy of the foregoing **CURLING AND COALITION PLAINTIFFS' PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW** was electronically filed with the Clerk of Court using the CM/ECF system, which will automatically send notification of such filing to all attorneys of record.

/s/ David D. Cross

David D. Cross